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HANDBOOK AND GUIDE

TO THE

BRITISH BIRDS

ON EXHIBITION IN

THE LORD DERBY NATURAL HISTORY
MUSEUM, LIVERPOOL

THE PUBLIC MUSEUMS, LIVERPOOL

Illustrated by Twelve Plates

(THIRD EDITION)

1932.

PRICE SIXPENCE

PLATE I.



BRITISH BIRDS GALLERY.



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Corporation of Liverpool.

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PREFACE.

The City of Liverpool Public Museums comprise under the one roof the Lord Derby Museum of General Natural History and the Mayer Museum of Archaeology and Ethnology. In 1851 there was bequeathed to Liverpool the celebrated Zoological Collection which had been brought together at Knowsley by the 13th Earl of Derby, thus forming the foundation of the present City Museums. While this natural history material is singularly rich and extensive, it is in the birds that probably the greatest interest has been taken. Among the Derby specimens, and also several collections of historical interest, including those from Sir Joseph Hooker's Ross Antarctic Expedition (1839-41) material, the Franklin Search Expedition (s.s. "Fox," 1857), and some of Captain Cook's voyages to the Sandwich Islands, are numerous types which are frequently consulted by experts. There is also much valuable material in the very large Study Collections which have been enriched by the purchase of the famous Tristram Collection in 1896.

On the exhibition galleries the bird specimens are no less important or attractive. The Liverpool Museum was the first in Great Britain, if not in the world, to design and construct habitat groups. In 1865, a Liverpool Museum group of the Bald Coot in its natural surroundings was exhibited at the British Association meeting in Birmingham. In view of its historical interest, this pioneer group is still on exhibition in the Gallery of British Birds. The numerous excellent habitat groups, which prove so attractive to our visitors, show how steadily the perfection of technique in their construction has increased in the able hands of the officers in charge of the Department of Vertebrate Zoology, Mr. J. W. Cutmore, and subsequently Mr. R. K. Perry.

The study of our British Birds and their habits still attracts numerous enthusiasts, and it is hoped that this, the third edition of our Handbook, will meet with the popular acceptance accorded to its predecessors. It has been completely revised by Mr. R. K. Perry, and additional information has been incorporated, which ought to enhance its interest and value.

DOUGLAS A. ALLAN,
Director of Museums.
CITY OF LIVERPOOL PUBLIC MUSEUMS.
March, 1932.

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INTRODUCTION.

During recent years, more and more people are beginning to realise that a vast amount of pleasure and profit can be derived from the observation of common natural objects. In this growing field of nature study, few subjects have attracted so much popular attention as our wild birds. Their courtship, their wonderfully constructed nests and colourful eggs, their marvellous tenderness and solicitude in the care of their young, and their elusiveness, all appeal strongly to the imagination, and never become commonplace. The ordinary nature lover can observe and note the habits and peculiarities of birds, he can record scientific as well as popular and interesting facts, and by doing so he will train his powers of observation and acquire a knowledge that will greatly increase his capacity for appreciation of nature.

The latest list of British Birds contains about 400 species, but opinion differs much as to the number which should be allowed to rank as British. Birds are not subject to physical barriers, such as affect mammals, reptiles or fresh-water fishes, and their ranks are constantly reinforced by migrants from the continent and even from the far distant shores of America. Thus, in addition to the resident species and annual migrants, the British Islands are visited by straggler species which have been blown out of their course on migration, so that birds which have occurred but once may be included in the British List. Others are doubtful as not sufficiently authenticated. Of the total number, about 130 are residents (species that breed and are found in this country throughout the year), about 55 are regular summer visitors or migratory birds which breed here, about 70 are spring and autumn migrants, and winter visitors which do not breed here, the remainder being rare and accidental wanderers.

The following lists of these respective groups, omitting the rare and accidental visitors, may be useful. All birds that may be found throughout the year in some part of the British Islands are included in the "Resident" list, but it is open to question whether certain of these, of which the main body is migratory, should be so regarded.

INTRODUCTION.

A.—RESIDENT BIRDS.

Included in this list are all species of which representatives remain throughout the year in some part or other of the British Islands. Certain of these species have their numbers greatly augmented at certain times in the year by visitors from the Continent.

Blackbird	Greenshank
Bullfinch	Greenfinch
Bunting, Cirl	Guillemot, Black
" Corn	Common
" Reed	Gull, Black-headed
" Yellow	Common
Buzzard, Common	Great Black-backed
Capercaillie	Lesser Black-backed
Chaffinch	Herring
Chough	Kittiwake
Coot	Hawfinch
Cormorant	Hawk, Sparrow
" Green (Shag)	Harrier, Hen
Crossbill	Heron, Common
Crow, Carrion	Jackdaw
" Hooded	Jay
Curlew, Common	Kestrel
Dipper	Kingfisher
Diver, Black-throated	Kite, Common
" Red-throated	Lapwing (Peewit)
Dove, Ring (Wood Pigeon)	Lark, Sky
" Rock	Wood
" Stock	Linnet
Duck, Eider	Magpie
" Garganey	Merganser, Red-breasted
" Mallard	Merlin
" Pintail	Moorhen
" Pochard	Nuthatch
" Scoter, Common	Osprey
" Sheld, Common	Owl, Barn
" Shoveller	Little
" Teal	Long-eared
" Tufted	Short-eared
" Widgeon	Tawny (Wood Owl)
Dunlin	Oyster Catcher
Eagle, Golden	Partridge, Common
Falcon, Peregrine	" Red-legged
Gannet	Petrel, Fulmar
Goldfinch	" Leach's Fork-tailed
Goosander	" Storm
Goose, Grey Lag	Pheasant
Grebe, Great Crested	Pipit, Meadow
" Little	Rock
Grouse, Black	Plover, Golden
" Red	" Ringed

INTRODUCTION.

Ptarmigan	Thrush, Missel
Rail, Water	Song
Raven	Tit, Bearded
Razorbill	” Blue
Redpoll, Lesser	” Coal
Redshank	” Crested
Robin	” Great
Rook	” Long-tailed
Shearwater, Manx	” Marsh
Siskin	Tree Creeper
Skuia, Arctic or Richardson's	Twite
” Great	Wagtail, Grey
Snipe, Common	” Pied
Sparrow, Hedge	Warbler, Dartford
” House	Woodcock
” Tree	Woodpecker, Great Spotted
Starling	” Green
Stonechat	” Lesser
Swan, Mute	Wren, Common
	” Golden Crested

B.—MIGRATORY BIRDS.

(a) Summer Residents.

Includes all species which visit the British Islands for nesting purposes.

Blackcap	Sandpiper, Common
Bittern, Little	Shrike, Red-backed
Buzzard, Honey	Swallow
Chiffchaff	Swift
Corncrake (Landrail)	Tern, Arctic
Crake, Spotted	” Black
Cuckoo	” Caspian
Curlew, Stone	” Common
Dotterel	” Gull-billed
Dove, Turtle	” Little
Flycatcher, Spotted	” Roseate (rare)
” Pied	” Sandwich
Garganey	Wagtail, Blue-headed
Grebe, Black-necked or Eared	” Yellow
Harrier, Montague's	” White
Hobby	Warbler, Garden
Martin, House	” Grasshopper
” Sand	” Marsh
Nightingale	” Savi's
Nightjar	” Sedge
Oriole, Golden	” Reed
Osprey	” Willow
Ouzel, Ring	” Wood
Phalarope, Red-necked	Wheatear
Pipit, Tree	Whinchat
Plover, Kentish	Whitethroat
Puffin	” Lesser
Quail	Whimbrel
Redstart	Wryneck

INTRODUCTION.

(b) Winter Visitors and Passing Migrants.

Includes the regular winter visitors and migrants making a short stay in the British Islands on their autumn and spring passage.

Auk, Little	Gull Little
Avocet	Hoopoe
Bittern	Harrier, Marsh
Brambling	Knot
Bunting, Lapland	Lark, Shore
” Orlotan	Nutcracker
” Snow	Owl, Scops
Buzzard, Rough-legged	” Snowy
Crake, Little	” Tengmalm's
” Baillon's	Pastor, Rose-coloured
Duck, Ferruginous	Phalarope, Grey
” Gadwall	Pitpit, Scandinavian Rock
” Golden-eye	Plover, Grey
” Long-tailed	Pratincole
” Scoter, Velvet	Redpoll, Mealy
” Scaup	Redstart, Black
Diver, Great Northern	Redwing
Eagle, White-tailed	Redshank, Spotted (Dusky)
Falcon, Greenland	Ruff
Fieldfare	Sanderling
Firecrest	Sandpiper, Green
Goose, Bean	” Wood
” Bernacle	” Purple
” Brent	” Curlew
” Pink-footed	Shrike, Great Grey
” White-fronted	Snipe, Great
Godwit, Black-tailed	” Jack
” Bar-tailed	Smew
Grebe, Red-necked	Skua, Pomatorhinus
” Sclavonian	Stint, Little
Goshawk	” Temminck's
Grosbeak, Pine	Swan, Bewick's
Gull, Glaucous	” Whooper
” Ivory	Turnstone
” Iceland	Waxwing

The Lancashire and Cheshire records contain about 260 species, so that about 130 species recorded in other parts of the British Isles have not been seen in this neighbourhood. Of this total the resident species number about 85, the summer visitors or migratory birds which breed about 31, the winter visitants and migrants making a short stay on their autumn and spring passages, but not breeding here, about 77, the remainder being stragglers or occasional visitors.

INTRODUCTION.

In the British Gallery, all nesting birds of the neighbourhood, together with species common in other parts of the British Isles, are mounted with nests and natural surroundings, and in the following pages a short account is given of each species, stating whether resident or summer migrant, and giving details of distribution, of character of country frequented, food, structure and material of nest, number and colour of eggs, period of incubation, and other points of interest. The *winter migrants* and species that have only been recorded on rare occasions are on exhibition. Some of these latter, such as the Collared Pratincole, which is the first recorded specimen in Britain, are of special interest.

In addition, there are shown birds beneficial to agriculture and specimens illustrating changes in plumage according to age and season, albinism, melanism, and colours which protect.

As well as a cabinet of British Birds' Eggs, there is a case illustrating many interesting facts connected with egg structure, texture, colour, form, etc.

In revising this handbook the writer wishes to acknowledge the valuable assistance derived from the following sources:

H. F. Witherby, "A Practical Handbook of British Birds." Coward, "The Birds of Cheshire." "The Check List of the Fauna Committee of Lancashire and Cheshire." F. W. Holder and R. Wagstaffe, "Lancashire Coast Notes," in "British Birds," Vol. XXI, pages 190-194, Vol. XXIII, pages 50-56; and Mitchell, "Birds of Lancashire." The nomenclature used here is that of the "B.O.U. List."

BRITISH BIRDS

The collection of British Birds occupies a large portion of the Lower Gallery, commencing with cases lettered A and B, and then continuing from 1 to 131. A reference list and index to the case numbers, with common names of birds arranged alphabetically, is given on pages 85-87, and the species are generally, but not exactly, arranged in scientific sequence.

CASE A.

ALBINISM, MELANISM, AND COLOURS THAT PROTECT.

Albinism, or unusual whiteness, occasionally occurs in birds which normally are coloured. It may be either complete or partial, and is due to the lack of pigment or colouring matter in the feather and skin substance. True albinos have pink eyes, the colour being the red of the blood circulating in the retinal blood vessels as seen through the transparent tissue in front. The Starling, House Sparrow, Meadow Pipit and House Martin all illustrate this phase of plumage.

Very frequently the assumption of white feathers is only partial, hence "pied" birds, such as the following examples on exhibition:—Starling, Red Grouse, Wood Pigeon, Raven, Skylark, Corn Bunting, Jackdaw, Pheasant, Magpie, Brown Linnet, House Sparrow, Swallow, Merlin, Rook, Blackbird.

Melanism, or unusual blackness, is due to an excess of pigment. One of the finest instances of this is the Common Snipe. At one time it was regarded as representing a distinct species, known as Sabine's Snipe. Other typical examples here exhibited are the Bullfinch and Skylark.

Many species of birds possess plumage that blends so well with their natural surroundings that even a close inspection often fails to reveal their presence. It is also a characteristic of such birds to remain perfectly motionless (freezing) when approached, which suggests they are aware of the value of their obliterative colouring. In the group on the floor of this case, the following examples are exhibited:—An adult Woodcock, and the young of Dunlin Partridge, Common Snipe, Green Plover and Sandpiper.

CASE B.**SEASONAL CHANGE IN COLOUR OF BIRDS.**

In northern regions with well-defined seasons, many forms of animal life possess a colour variation which corresponds with that of their surroundings. The upper and lower groups represent the same scene during winter and summer, and it will be noted that the colour of the Ptarmigan and Snow Bunting harmonize with each season.

ROOK (*Corvus frugilegus*)

The adult rook is at once distinguished from the rest of the crows by the bare greyish-white patch at the base of its bill. This wary resident is the most numerous of the crow family, and is common throughout the British Isles. During the autumn, large numbers invade our country from the Continent, returning thither in the spring. It will devour almost any kind of food, flesh, fruit, garbage, fish, eggs, small mammals, worms, insects, and corn. It is gregarious both in winter and summer, nesting in colonies known as "Rookeries." This species is decidedly capricious in its choice of a nesting site, but when once a rookery is established, the birds return year after year. The nest, a stout and compact structure of sticks, solidified with earth and lined with grass, moss, wool and hair, is usually built in the uppermost branches of tall trees. The eggs, three to five in number, are green or bluish-grey, uniformly mottled with ash-grey and brown. Incubation is by both sexes, and lasts 17-18 days. One brood is reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

CARRION CROW (*Corvus corone*)

This resident species is distributed generally throughout England and Wales, but is local and rare in the north and west of Scotland and Ireland, where the hooded crow takes its place. The two species not infrequently interbreed (see Case 6a). It is an omnivorous feeder, small rodents, small birds, frogs, and shell-fish form part of its diet. The nest, generally built in a tall isolated tree or on the ledge of a rock, is constructed of twigs, earth and moss, with a lining of hair and wool. The eggs, which closely resemble those of the rook in colour, are four to five in number. Incubation lasts 18-19 days. One brood is reared during a season.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 6.]

CASE 1.**COMMON STARLING (*Sturnus vulgaris*)****CASE 2.**

A common and well-known resident throughout the British Isles is the Starling. It is numerous in cultivated areas, where it destroys immense quantities of noxious grubs and insects. During the period when cherries are in season, it devours quantities of this fruit, and its good deeds as a pest destroyer are apt to be forgotten. The nest, a large untidy structure of dry grass and straw, sometimes lined with wool or feathers, is placed in various sites, such as roofs, holes in trees, masonry, etc. Four to seven pale blue eggs are the usual number laid in a season. The period of incubation is 12 to 13 days, and is shared by both sexes. Two broods are often reared in a season. It is interesting to note that the young birds are dull brown, and do not possess the metallic sheen of the parents.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

CASE 1.**JAY (*Garrulus glandarius rufitergum*)****CASE 3.**

This handsome resident is distributed generally throughout the wooded areas of England and Wales, but is not found in the Isle of Man. In Scotland it is very local, while in Ireland it is replaced by a slightly different species. The Jay is an extremely shy and wary bird, and more often heard than seen. Its diet is varied—young birds, eggs, mice, peas, nuts and fruit are all consumed. The nest, built of sticks, twigs and earth, and lined with fine roots, is usually placed on a branch of a tree, often some distance from the ground. The eggs, from four to seven in number, are greenish-grey, speckled with olive-brown. Period of incubation 16 days. One brood is reared during the season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

MAGPIE (*Pica pica*)**CASE 4.**

This handsome pied resident is distributed generally throughout the British Isles, but occurs only locally in Scotland. It renders good service to the farmers by devouring large quantities of snails, slugs, field mice and young rats. Although frequenting woodlands, it also haunts the open moorlands and fields, where occasional flocks may be seen. Tall trees and straggling hedgerows are favourite nesting sites. The nest is a bulky structure composed of sticks and twigs, the bottom sticks being cemented with mud and clay, and the inside is lined with fine roots. The whole nest is

covered with a roof of sticks. Five to six eggs are usually laid, varying from greenish-blue to greyish-green, closely spotted with brown. Incubation lasts 17 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

RAVEN (*Corvus corax*)

The Raven, though formerly widely distributed throughout the British Isles, is now confined to wild mountainous districts and sea cliffs. Its diet is very varied, including carrion of all kinds, injured birds, small mammals, eggs, and occasionally lambs. In Cheshire, Ravens were plentiful in the 15th Century, and formerly frequented the marshes of the Dee. A pair nested on Hilbre Island in 1875 (Coward, "Birds of Cheshire," page 102). Ravens pair for life and are not gregarious like the Rook. The nest is solidly built of sticks, heather stalks, and earth, with a lining of hair and wool, and placed upon an inaccessible ledge, screened by overhanging rocks. The nest is often occupied year after year. The eggs vary from four to six in number, and are light-blue to greenish, freely blotched and spotted with brown or black, and ashy-grey shell marks. Incubation lasts 19-21 days.

Lancashire: Nests in the north.

Cheshire: Very rare visitor.

[Egg cabinet, drawer 6.]

HOODED CROW (*Corvus cornix*)

CASE 6.

This grey-backed Crow visits England and Wales in large numbers during the winter months, while in the north and west of Scotland and in Ireland it is resident. Its diet, like that of all crows, is very varied, including carrion, small mammals, wounded birds, shellfish, grain and beetles. It destroys enormous quantities of eggs of many of our coastal breeding birds. Its favourite nesting sites are low bushes on the side of a steep bank or on a rocky ledge. The nest is strongly built of sticks, moss and earth, and lined with wool, hair and feathers. The eggs, four to six in number, are greenish-grey in colour, spotted and blotched over the whole surface with shades of amber brown, and underlying ashy shell-marks. Incubation is shared by both sexes, and lasts 18-19 days.

Lancashire and Cheshire: Occasional winter visitor.

[Egg cabinet, drawer 6.]

RUFF (*Philomachus pugnax*)

CASE 7.

This passage migrant formerly nested annually in the eastern counties of England, but now only an occasional pair remain to breed. The name "Ruff" has been bestowed on account of the breast shield or frill which is assumed by the male bird in the breeding season. It is one of the most striking nuptial garments of any bird in the world. Insects, freshwater bivalves, small crustacea and worms form part of its diet. Its favourite haunts are swamps and marshes. The nest, a hollow in the ground, lined with fine grasses, is well hidden. The eggs, normally four in number, pyriform in shape, and ranging from pale grey or ochreous to pale green in colour, are boldly spotted and blotched with sepia and ashy shell-marks. They are single-brooded.

In the group several males are depicted in combat for possession of the female, who sits calmly by awaiting the issue of the fight.

JACKDAW (*Corvus monedula spermologus*)

CASE 8.

This pert resident is abundantly distributed throughout the British Isles. Locally it may be often met with in our parks and gardens. Gregarious in their habits, small colonies of Jackdaws may often be seen on cliffs, ruins, church towers and plantations, similar sites being favoured for nesting. Owing to the large quantities of leather jackets, wire-worms and cockchafer grubs this bird consumes, it is certainly beneficial to the farmer. The nest is a bulky structure of sticks, straw and litter lined with wool, fur or hair. The eggs, four to six in number, are greenish-blue spotted and mottled with brown. Incubation lasts 18-20 days. One brood.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

CHOUGH (*Pyrrhocorax pyrrhocorax pyrrhocorax*)

CASE 9.

This red-legged resident crow is now restricted to certain localities in the south-western countries of England, parts of Wales, the Isle of Man, and among the sea-cliffs of Ireland. Its food consists chiefly of insects, but larvae of moths, worms, and at times corn, are consumed. A favourite nesting site is a recess or crevice in a cliff face, in which a bulky nest of sticks and heather stalks, lined with cow hair, is built. The eggs, from three to six in number, are creamy yellow, with greatly varying grey underlying marks and brown spots. The period of incubation lasts 17-18 days. One brood is reared during a season.

Lancashire and Cheshire: A very rare vagrant.

[Egg cabinet, drawer 5.]

BULLFINCH (*Pyrrhula pyrrhula nesa*)

This shy and retiring resident is generally distributed throughout the wooded districts of Great Britain and Ireland. Its food consists of seeds, fruits and berries, but it is very partial to the young buds of fruit trees. The nest is a beautiful structure on account of the network of fine twigs with which it is surrounded, the inside being neatly lined with fine rootlets. The eggs, usually four to five, are clear green-blue, sparsely spotted and streaked with dark purple-brown. Incubation, chiefly by the hen, lasts 13-14 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

CHAFFINCH (*Fringilla coelebs*)

A familiar and well-known resident in all cultivated and wooded districts of the British Isles is the Chaffinch. In winter, flocks may be seen associating with sparrows and greenfinches in the stubble and in farmyards. Their food consists of insects, fruit, birds and grain. The bird builds the most beautiful nest in Britain. It is a cup-shaped structure, composed chiefly of moss, twigs and rootlets, clad externally with cobwebs and lichens, the inside being neatly lined with hairs, feathers and down. The nest may be placed in a bush or in the branch of a tree. The eggs, from four to six in number, are pale blue, generally suffused with reddish-brown and dark crimson spots. Incubation, chiefly by the hen, lasts about 12 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

GREENFINCH (*Chloris chloris*)

This is a common resident, and is found nearly everywhere in the British Isles where trees and bushes are present. In summer this species is somewhat shy, but in winter it is found in fields and farmyards associating with sparrows and chaffinches. The nest, a rather carelessly built structure of moss, twigs and rootlets, with a lining of horsehair and a few feathers, is placed in bushes, shrubs or trees. From four to six eggs of a pale greenish-blue colour, sparingly spotted and streaked with red-brown and pale violet shell-marks, are laid at the end of April, or early in May. The period of incubation is 13-14 days. At least two broods are reared during the season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 4.]

CASE 10.**LESSER REDPOLL** (*Acanthis linaria cabaret*)**CASE 13.**

This active little resident is more generally distributed over Great Britain during the winter than at any other time, being somewhat local during the nesting season. Its food consists chiefly of seeds (alder, birch, bulrush, and many small plants); insects and their eggs are also taken. The nest, which is usually placed in a low tree or bush, is a neat, compact, cup-shaped little structure, composed of grass, moss, and a few twigs, and lined with hair and feathers. The eggs, four to six in number, are deep blue, spotted and streaked with light brown. Incubation lasts about 11 days. Two broods are frequently reared.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 4.]

CASE 11.**TWITE** (*Acanthis flavirostris*)**CASE 14.**

This is a resident species in the British Islands, breeding in colonies on the wild moorlands from the midlands northward, and it is also common on the mountains of Ireland. It feeds principally on seeds and insects, though grain and young turnips are also eaten. The nest, made of moss and twigs of heather, neatly lined with rootlets, wool, feathers or thistle-down, is usually placed on the ground, but sometimes in a tree. The eggs, four to six in number, are pale greenish-blue, blotched with reddish-brown. Two broods are generally reared in a season.

Lancashire and Cheshire: It is found chiefly on the hills.

[Egg cabinet, drawer 5.]

CASE 12.**LINNET** (*Acanthis cannabina*)**CASE 15.**

A resident species, distributed generally throughout the British Isles, but rare in the north of Scotland, are the linnets. During the autumn they are found in flocks, feeding on the stubble and open ground near the sea-shore, but in the nesting season, they are less gregarious, although many pairs may be found nesting quite close to each other in gorse-covered districts. Their food consists chiefly of seeds, hemp, charlock, knot-grass and weeds. The nest, composed of moss, twigs and grass, and lined with hair, wool and feathers, is usually placed in a gorse bush. The eggs, four to six in number, are bluish in colour, with rufous spots confined to the larger end, where they form a ring. The period of incubation, which is chiefly by the hen, is 14 days.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 4.]

GOLDFINCH (*Carduelis carduelis britannica*)**CASE 16.**

This sprightly little resident finch is distributed generally throughout England and Wales, is less common in Ireland, and scarce in Scotland. During the summer it feeds chiefly on insects and larvae, and in autumn and winter on seeds. The nest, which is often placed far out on a spreading bough in an orchard, is neatly made of moss, grass and wool, and lined with vegetable down, hair and feathers. In it are laid four to six eggs, in colour greenish-white, spotted and streaked with purplish-brown. Two broods are produced in the year. The period of incubation, performed by the hen, is 13-14 days.

Lancashire and Cheshire: Rare.

[Egg cabinet, drawer 4.]

REED BUNTING (*Emberiza schoeniclus*)**CASE 17.**

A resident species, the Reed Bunting is distributed generally throughout the British Isles, but is more restricted than the other British Buntings. Among its favourite haunts are reed beds and swamps, where small molluscs, crustacea, insects, and seeds of marsh plants furnish abundant food. Osier stumps or tussocks are often chosen as nesting sites, where a nest formed of bents, moss and grass, and lined with horsehair, is built. The eggs, four to six in number, are purplish gray, boldly streaked with purplish-brown. Two, and sometimes three broods are raised in a season. Incubation, chiefly by the hen, lasts 13-14 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

CORN BUNTING (*Emberiza calandra*)**CASE 18.**

This resident and locally abundant species is fairly common on the lowlands of the Mersey. Unobtrusive and sluggish, this bird is often overlooked. A general diet of seeds, corn, buds, cockchafers and other small beetles is eaten. The nest, composed of bents and grasses, and lined with hair, is often placed on the ground among growing corn, and occasionally in a scrub or furze bush. About the end of May, three to six dull purplish, blotched and streaked with dark purplish-brown, eggs are laid. Incubation, chiefly by the hen, lasts 14 days.

Lancashire and Cheshire: Common and local.

[Egg cabinet, drawer 5.]

YELLOW BUNTING (*Emberiza citrinella*)**CASE 19.**

This familiar resident species is common and distributed generally throughout the British Isles. Its food is chiefly vegetable; corn, seeds of weeds, wild fruits and insects, are all eaten. The nest, built of stalks, bents and a little moss, and lined with horsehair and fine grass, is usually placed on or near the ground. A hedge-bottom by the roadside, or at the foot of a bush on a furze common, are both favoured sites. The eggs, three to five in number, are generally purplish-white, pencilled with fine hair lines of dark brown and a few spots. Incubation, chiefly by the hen, lasts 14 days. Two or three broods are produced in a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 5.]

(1) SNOW BUNTING (*Plectrophenax nivalis*)**CASE 20.**

An annual winter visitor, chiefly to our coasts.

Lancashire and Cheshire: Frequent in winter.

[Egg cabinet, drawer 5.]

(2) CIRL BUNTING (*Emberiza cirlus cirlus*)**CASE 20.**

Occurs only in the southern counties of England.

Lancashire and Cheshire: A very occasional wanderer.

[Egg cabinet, drawer 5.]

(3) ORTOLAN BUNTING (*Emberiza hortulana*)**CASE 20.**

A vagrant. Lancashire, one record near Manchester in November, 1827, and was figured by Selby Mitchells, "Birds of Lancashire," Ed. 2, page 79.

[Egg Cabinet, drawer 28.]

(4) LAPLAND BUNTING (*Calcarius lapponicus*)**CASE 20.**

A very rare winter visitor. Lancashire, four records, all require confirmation.

[Egg Cabinet, drawer 28.]

(5) MEADOW BUNTING (*Emberiza cia*)**CASE 20.**

A rare straggler to the British Isles. Six records in England.

CROSS BILL (*Loxia curvirostra*)

Though it has been known to breed in numerous instances in England, this resident species is more often met with in the northern and central pine forests of Scotland and Ireland. The peculiar shaped bill is admirably adapted for tearing open cones of pine and larch to extract the seeds, which form its principal diet. The nest, strongly built of fir twigs, with a superstructure of wool and grass, and lined with rabbit fur, is usually placed in a pine tree, some distance from the ground. The eggs, four to six in number, are greenish-red, with a few bold spots and streaks of purple-red. Incubation lasts 12 days. Two broods are sometimes reared.

Lancashire and Cheshire: Occurs occasionally.

[Egg cabinet, drawer 5.]

NIGHTINGALE (*Luscinia megarhyncha*)**CASE 21.**

This plain-looking migrant would often be overlooked were it not for its powerful and varied song. A summer visitor (April to September), it is irregularly distributed throughout England and Wales. Its food, principally obtained on the ground, consists chiefly of worms, insects, fruit and berries. Thick undergrowth, copses, and tangled hedgerows are its favourite haunts. The nest, generally near the ground, is formed of dead leaves with a lining of hair, in which four or five olive-brown eggs are laid. Incubation takes 14 days, and is performed by the hen alone. Single brooded.

Lancashire: Very rare. Cheshire: Annual visitor to the south.

[Egg cabinet, drawer 1.]

WOOD LARK (*Lullula arborea*)**CASE 22.**

In the British Isles this resident species occurs sporadically. It is most abundant in some of the southern counties of England, and becomes rarer from the Midlands northward. In Scotland and Ireland it is almost unknown. Although the wood-lark frequents arable land, it prefers the neighbourhood of woods, perching upon some favourite tree. Its food consists chiefly of insects, and seeds of grasses and other plants. A neatly constructed nest of moss and bents, lined with finer grass and horsehair, is usually built under a tussock of grass on the ground. The eggs, numbering four to five, are greyish-white, closely freckled with fine reddish-brown spots and violet shell-marks. Incubation lasts 14 days. Two broods are reared.

Lancashire and Cheshire: Extinct.

[Egg cabinet, drawer 6.]

CASE 21.**SISKIN** (*Spinus spinus*)**CASE 24.**

The Siskin is a resident and nests regularly in the pine woods of Scotland and Ireland, more rarely in the north of England. Elsewhere it is chiefly known as a winter visitor. Its food consists mainly of seeds of trees, both deciduous and coniferous. The nest, built of small dead twigs with lichen attached, moss, bents and wool, with a lining of roots, feathers and down, is frequently placed high up in a fir tree, and is very difficult to find. The eggs, four to five in number, are pale blue in colour, marked with reddish spots. Incubation lasts 12-14 days.

Lancashire and Cheshire: A winter visitor.

[Egg cabinet, drawer 4.]

CASE 22.**RED-BACKED SHRIKE** (*Lanius collurio*)**CASE 25.**

In the British Isles this summer resident is irregularly distributed throughout the south and central counties of England and Wales from May until late August, when it returns south. The food consists of young birds, bees, beetles and other insects, and from its curious habit of impaling its prey on thorns, this species and its allies are commonly known as "Butcher Birds." (Note the larder in group.) The nest, often built in a thick clump of brambles or hawthorn, is composed of green moss, bents and stalks, and lined with fine grass, roots, hair and wool. The eggs are from four to six in number, and vary greatly in markings and colour. Incubation, by hen only, lasts 15-16 days. One brood is reared during a season.

Lancashire and Cheshire: Rare spring visitor.

[Egg cabinet, drawer 4.]

CASE 23.**GARDEN WARBLER** (*Sylvia borin*)**CASE 26.**

This summer resident arrives in England towards the end of April and remains until September, when the majority go south. It is locally distributed over the British Isles. Its diet is mainly insects, small caterpillars, fruit and berries. Shrubberies and gardens are selected as nesting sites. The nest, composed of grass stalks and bents, and lined with fine grass and hair, is often placed in a low bush. The eggs, four to five in number, are white, blotched and spotted with varying shades of olive-brown. Incubation lasts about 13 days, and is shared by both sexes.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 2.]

HAWFINCH (*Coccothraustes coccothraustes*)**CASE 27**

This shy resident species is more numerous in the south-eastern counties of England than elsewhere in the British Isles. Although possessed of a somewhat striking appearance, it is very difficult to detect in the field. This is due to its characteristic habit of remaining motionless (freezing) when approached. They reject the pulp but consume many kinds of seeds and kernels, including sloe, plum, cherry, and hawthorn, while green peas are eagerly sought. The nest, often placed on horizontal branches of fruit trees, is built of twigs, lichen and bents, and lined with hair and fine roots. Four to five eggs are laid about the beginning of May.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 4.]

TREE SPARROW (*Passer montanus*)**CASE 28.**

This resident species is more frequently met with in the eastern counties of England and Scotland than any other part of the British Isles. It is a far more retiring species than the house sparrow, and is more elegant in appearance. Insects, corn and weeds form part of a varied diet. Pollard willows and haystacks are often favoured as nesting sites, the nest being similar in structure to that of the house sparrow. The eggs, usually four to six in number, vary considerably in colour. Incubation is shared by both sexes, and lasts 13-14 days, at least two broods being reared.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 4.]

NUTHATCH (*Sitta europaea affinis*)**CASE 29.**

The distribution of this resident species in the British Isles is confined chiefly to the southern and midland counties of England. Unlike the woodpeckers, this species does not use its tail when climbing up the surface of tree trunks. Its food consists of beechmast, acorns, insects and hazel nuts, the latter being wedged into tree crevices and broken open with a loud tapping. The nest of dried leaves and bark is usually formed in a hole in a tree trunk, and the entrance is nearly always reduced in size with hard mud. The five to eight white eggs, spotted with red-brown and a few violet shell-marks, are usually laid early in May. Incubation lasts 13-14 days.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 3.]

HOUSE SPARROW (*Passer domesticus*)**CASE 30.**

This most familiar and hardy resident species is distributed generally throughout the British Isles. Though a harmless and pleasant companion to the dwellers in towns, it becomes, owing to its numbers, a serious pest in the country, where it does an infinite amount of mischief at all seasons. Its untidy domed nest, built of straw and warmly lined with wool or feathers, may be placed in almost any suitable situation on trees or under eaves, etc. The eggs, three to six in number, are very variable in colouring. Incubation, chiefly by the hen, lasts 13-14 days. Two or three broods are reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 4.]

GREY WAGTAIL (*Motacilla cinerea*)**CASE 31.**

From September to March this resident species frequents sluggish lowland streams, ponds and watercress beds, but in the breeding season it takes to the mountain streams. It is widely distributed in the British Isles, but it is nowhere abundant. Flies, small beetles, and molluscs are its principal diet. The nesting place is varied, a rocky ledge or cavity in a wall, generally close to running water, is often favoured. The eggs, usually four to six in number, are buff or stone colour, faintly marbled with greyish-brown, and often with a dark hair streak. The period of incubation lasts about 14 days. Generally single brooded.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 3.]

YELLOW WAGTAIL (*Motacilla flava rayi*)**CASE 32.**

This insectivorous summer resident arrives early in April and departs in September. It is distributed generally throughout England and Wales, and in Scotland is found chiefly in the Clyde area. In Ireland it is found locally. It is a bird of cultivated fields and cattle pastures rather than the water-side. The nest, built of bents and roots and thickly lined with a pad of cow- or horsehair, is often found on the ground in low-lying meadows. The eggs, usually four to six in number, vary extremely in colour and markings. Incubation, chiefly by the hen, lasts about 14 days. One brood is usually reared, but occasionally two.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

WOOD WARBLER (*Phylloscopus sibilatrix*)

This summer resident is rightly named, being exclusively a bird of the woods. Arriving on our southern shores in April, it is widely but unevenly distributed in England and Wales. It is very much a bird of the tree tops, where it may often be seen searching for insects among the sunlit leaves. The nest is domed, with the opening at the side, and usually is placed on the ground among tangled undergrowth. The eggs, which vary from five to seven in number, are white, thickly freckled, and sometimes zoned with dark brown. Incubation, by female only, 13 days. Single brooded.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 2.]

DARTFORD WARBLER (*Sylvia undata*)

This resident warbler is chiefly confined to the southern counties of England. It is at once distinguished from other warblers by its dark colouration and long tail, which is often held erect. It frequents gorse and heather-covered commons, feeding on flies, spiders and small caterpillars. The nest, placed in long heather or gorse, is compactly built of ling, grass and moss, and is lined with roots, hair, and a few feathers, and studded externally with the cocoons of spiders. From three to five greenish-white eggs, finely spotted with olive-brown, are laid about the beginning of May. Incubation lasts some 12 days.

Lancashire and Cheshire: Not recorded.

[Egg cabinet, drawer 2.]

SKYLARK (*Alauda arvensis*)

This well-known species is abundant and distributed generally throughout the British Isles. In the autumn, enormous flocks of skylarks from the Continent invade our shores. It is commonly met with on moors, heaths, meadows, and arable land, where its continuous, resounding song, delivered on the wing at a great height, is characteristic of the species. In winter, its diet is chiefly seeds and weeds, and in summer it is beneficial to mankind by destroying many noxious pests and their larvae, that are a menace to agriculture. The nest, invariably placed in a grass-sheltered depression on the ground, is rather loosely built of dried grasses. The eggs, varying from three to five, are buff-white, densely mottled with olive-brown. Incubation, performed by hen alone, lasts 14 days. Two and sometimes three broods are reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 6.]

CASE 33.**TREE PIPIT** (*Anthus trivialis*)**CASE 36.**

From April through the summer, this migrant is distributed generally throughout the more wooded areas of Great Britain. It is more rare in the north of Scotland, and seldom recorded in Ireland. It frequents the fringes of woods and plantations, where it may often be seen mounting into the air, and uttering its pretty and melodious song. The nest, built in a depression on the ground, is composed of dry grass and bents with moss in the foundation, and it is lined with finer grasses and varying amounts of hair. The eggs, four to six in number, are very variable in colour. Incubation lasts 13-14 days.

Lancashire and Cheshire: Very Common.

[Egg cabinet, drawer 3.]

CASE 34.**MEADOW PIPIT** (*Anthus pratensis*)**CASE 37.**

This is a common and well-known insectivorous resident species throughout the open country in the British Isles. The majority of these birds move south in the autumn, returning north in the spring. Rough pastures, moorlands, sandhills and golf courses are favoured as nesting sites. The nest, built of dry grass and bents, and lined with fine grass and hair, is often placed under a tussock of grass. The eggs, four to six in number, are brown or grey, mottled with brown and ash-grey. Incubation lasts about 14 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

CASE 35.**ROCK PIPIT** (*Anthus spinolella petrosus*)**CASE 38.**

This resident species is distributed generally on the rocky shores throughout the British Isles. Its food consists of marine insects, flies, sandhoppers, crustacea and mollusca, which it obtains among the seaweed at low water. The nest, made of dry grasses, is often placed in a crevice of the rocks, and sheltered by vegetation. The eggs, four to five in number, are usually greyish-white, thickly covered with fine olive-brown and ashy-grey spots. Incubation lasts about 14 days. Two broods are reared during a season.

Lancashire and Cheshire: Visits the coast.

[Egg cabinet, drawer 3]

SEDGE WARBLER (*Acrocephalus schoenobaenus*)**CASE 39**

From April until September this insectivorous resident species is widely distributed over England, Ireland and Wales, but is less common towards the north of Scotland. Its favourite haunts are osier beds and thick bushes situated near ponds and ditches, an environment which suits its skulking habits admirably. The nest, often placed in rank vegetation, is rather a bulky structure, built of stalks and grass, and lined with hair. The eggs, numbering five to seven, are yellowish in colour, mottled and streaked with black hair lines. Incubation lasts 13-14 days. A second brood is sometimes reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.

BLACK CAP (*Sylvia atricapilla*)**CASE 40.**

This summer resident, though somewhat local in occurrence, is fairly well distributed throughout England and Wales, but is more rare towards the north of Scotland and in Ireland. It frequents woods, tangled hedgerows and thickets, where its rich varied notes may frequently be heard. Insects, fruit, and berries are its chief diet. A lightly-built nest of bents, roots and grass, and lined with horsehair, is often placed in a low bush. The eggs, from four to five in number, are usually light-buff, clouded and blotched with brown and ashy shell marks. Incubation is shared by both sexes, and lasts 14 days. It is apparently single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.

LESSER WHITETHROAT (*Sylvia curruca*)**CASE 41**

From April to September this summer resident is distributed generally throughout the southern and midland counties of England. In Wales it is found mainly in the eastern parts; in Scotland it is chiefly known as a passage migrant, while in Ireland it has been recorded only four times. Its food is composed chiefly of larvae and eggs of various insects, but cherries, blackberries and elderberries are also eaten. Tangled hedges, shrubberies and gardens are its favourite resorts. The nest, built of dry stalks and roots and often lined with horse-hair, is placed in a thick bush. The eggs, four to five in number, are creamy white, spotted with brown and grey shell marks, mostly at the larger end. Incubation, shared by both sexes, lasts 10-13 days. Apparently only one brood is reared.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 2.

PLATE II.



THE WREN.

CASE 43.

p.29.

GRASSHOPPER WARBLER (*Locustella naevia*)

CASE 42

This summer resident owes its name to a peculiar song that somewhat resembles the chirping of the grasshopper. It is fairly evenly distributed in suitable localities in England, Wales and Ireland, but in Scotland its numbers diminish towards the north. Caterpillars, flies, woodlice and insects form its principal diet. Ferns, gorse-covered commons, and young plantations are its favourite haunts, but owing to its skulking habits it is always difficult to observe. The nest, built of dead leaves, is usually hidden in tangled herbage near the ground. The eggs, from five to seven in number, are creamy white, and thickly spotted with brownish-red. Two broods may sometimes be reared.

Lancashire and Cheshire: Sparsely distributed.

[Egg cabinet, drawer 2.]

WREN (*Troglodytes troglodytes*)

[See PLATE II.]

CASE 43.

The Wren is one of the most familiar residents of the British Isles, and its boisterous song and fearless demeanour have combined to make it popular with all. Aphides, spiders, small caterpillars and seeds form its chief food. Its nesting sites are varied, woodstacks, ivybanks, hedges and thatch are all examples. The nest is ball-shaped, with a rounded entrance in the side, and is composed of moss, dead leaves or bracken, lined with feathers. The male bird makes several nests, but the lining is only added by the female to the nest which is to be used for breeding. The eggs, numbering five to nine, are white spotted with brownish-red. Incubation lasts 14 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

GOLDEN CRESTED WREN

(*Regulus regulus anglorum*)

CASE 44.

This resident species is the smallest of our British birds, and a most beneficial species, as it feeds almost entirely on insects, including a large number of minute but very destructive pests. It is widely distributed over the British Isles, but in the autumn the number of resident birds is enormously increased by the arrival of large numbers from abroad. Well-wooded districts where pine, larch, spruce, and fir trees abound, are its favourite haunts. The nest is beautifully constructed of moss, wool and spiders' webs, thickly lined with feathers, and is generally placed beneath the extremity of a branch of some evergreen tree. The eggs, from seven to ten

in number, vary from white to ochreous in ground colour, with fine spots of brown on the larger end. Incubation lasts 12-13 days. Two broods are usually reared in a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.]

LONGTAILED TITMOUSE

(*Aegithalos caudatus roseus*)

This restless Titmouse is resident and widely distributed throughout the British Isles. Like other Titmice, it feeds on insects and their larvae, as well as seeds and fragments of buds. With moss, lichen, cobwebs, feather and hair it builds a large upright, oval-shaped nest with an entrance hole near the top. The nest is generally placed in a thorn, furze or bramblebush, but sometimes in trees. The eggs, eight to twelve in number, are pale buff in colour, minutely freckled with yellowish-brown. Incubation, chiefly by the hen, lasts 12 days. Two broods are reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

SPOTTED FLY CATCHER

(*Muscicapa striata*) **CASE 46**

This Fly Catcher appears in the south of England about the first week in May, and is distributed generally throughout the British Isles until September, when it departs for Africa. It feeds almost entirely on insects, which it captures by making short sallies in the air, and then returns to the perch it has just left. The nest, a lightly-built structure of moss, lined with wool, hair and feathers, is often built against a wall or tree trunk, and sometimes in a hole. The eggs, four to five in number, are pale greenish-grey, spotted and blotched with light red and lavender. Incubation, by both sexes, lasts 13 days. Two broods are occasionally reared.

Lancashire and Cheshire: Fairly common.

[Egg cabinet, drawer 4.]

BLUE TITMOUSE

(*Parus caeruleus obscurus*) **CASE 47**

This familiar and well-known little resident is very widely distributed throughout the British Isles. It frequents gardens, orchards, hedgerows and coppices, feeding principally on small insects, especially plant lice, aphides and scale insects, and thereby renders a good service to the gardener. Cavities in trees, walls and banks are all common nesting sites. The nest is built of wool and hair, and lined with moss and feathers.

Eight to ten white eggs, speckled with rust red, are laid in April. Incubation 13-14 days. One brood is produced in a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

GREAT TITMOUSE

(*Parus major newtoni*)

CASE 48

The Great Titmouse is the largest of this energetic group and is distributed generally throughout the British Isles. Insects and seeds form its chief diet, while the young are fed mainly on caterpillars, including many which are destructive to fruit trees. The nest is a flattish structure of moss mixed with dry grass and layered with felted hair or down. Holes in trees, walls or other secluded cavities are used as nesting sites. The eggs usually number five to eleven, and are pure white, spotted with deep red. Incubation lasts 14 days. Only one brood is reared during the season.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 3.]

COAL TITMOUSE

(*Parus ater britannicus*)

CASE 49

This active little resident is distributed generally throughout the woodlands, orchards and gardens of Great Britain. Insects, with occasional seeds, form its chief diet. The young are fed almost entirely on caterpillars, for which the parents maintain a relentless search. A hole in a tree or bank is often favoured as a nesting site, in which is made a loosely constructed nest of moss lined with a thick layer of felted hair. The eggs, six to eight in number, are white, speckled with pale red. One brood is reared during the season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

MARSH TITMOUSE

(*Parus palustris dresseri*)

CASE 50.

This active species is confined to Great Britain, but is unknown in Anglesey. Woodlands, spinneys and marshy areas, where there are decayed stumps, are the usual haunts of this little resident. Its diet consists chiefly of insects, but in winter seeds and berries are largely consumed. The nest, made of moss, is often thickly felted with rabbit fur or down. Common nesting sites are decayed alder or willow stumps in which a hole is enlarged. The eggs, varying in number from six to ten, are white spotted with light red. Incubation lasts 13 days. Two broods are sometimes raised.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

NIGHTJAR (*Caprimulgus europaeus*)**CASE 51.**

This beautiful summer resident is one of the latest migrants to reach the British Isles, seldom arriving before the middle of May, and departing in September. It is generally abundant throughout Great Britain, except in the most northern islands where it is only a straggler. Heaths, moors, woodlands and commons, abounding with gorse and bracken, are its favourite haunts. The Nightjar is a very beneficial species as it feeds solely on insects, most of which are captured on the wing, at twilight, or during the night. No nest is made, the two beautifully marbled eggs being deposited on the ground. Incubation lasts for 18 days, and the young, when hatched, are covered with down.

Lancashire and Cheshire: Common.

[Egg Cabinet, drawer 6.]

WILLOW WARBLER (*Phylloscopus trochilus*)**CASE 52.**

This summer resident frequents woods, orchards and gardens throughout the British Isles from April to September. Small insects such as aphides and flies form its principal diet, though elderberries and currants are eaten during the autumn. The nest is dome-shaped, with an entrance in the side, and is built of green moss and grass, with an ample lining of feathers. It is carefully concealed in herbage near the ground. The six or seven white eggs are spotted with light red. Incubation, by hen alone, lasts 14 days. It is apparently single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.]

CHIFF-CHAFF (*Phylloscopus collybita*)**CASE 53.**

This is one of the earliest summer migrants to the British Isles, where its familiar note, from which its name is derived, is often heard early in March. The majority leave our islands in September, but a few occasionally remain in the south of England throughout the year. Its food consists chiefly of the eggs and larvae of small insects, aphides and small spiders, which are mostly obtained from forest trees. The dome-shaped nest built of dead leaves, moss and bents, with a thick lining of feathers is often placed in clumps of brambles or among branches of yews or hollies. The eggs, generally six in number, are white with distinct spots of dark purplish-brown. Incubation, by the hen only, lasts about 13 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.]

ROBIN (*Erithacus rubecula melophilus*)**CASE 54.**

This well-known and familiar resident is distributed generally throughout the British Isles, where its legendary associations, large bold eye and fearless nature have combined to make it a general favourite. Worms, insects, small snails, berries and occasionally seeds, form its principal diet. The nest, built of dead leaves and moss, lined with hair and a few feathers, is found in various sites such as hedgerow banks, holes in walls, in sheds and even old tin cans (as here shown). The eggs, from five to seven in number, are usually white, with fine freckles of sandy red. The nesting season commences in March and two, or even three broods are reared during the season. The Cuckoo often deposits its egg in the Robin's nest. Incubation, 13-14 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawers 1 and 7.]

RING OUZEL (*Turdus torquatus*)**CASE 55.**

This summer resident arrives in April and is distributed locally over the British Isles till about the end of September, when the majority go south. In mild seasons it has been known to stay until November. High moorlands are its favourite haunts, where it feeds on molluscs, worms, insects and berries. The nest, similar to that of the Blackbird in structure, is often placed in heather or low bushes. The eggs, from four to five in number, resemble those of a blackbird, but are generally more boldly marked. Incubation is by both sexes, and two broods are produced in a season.

Lancashire and Cheshire: A summer resident on high ground.

[Egg cabinet, drawer 25.]

WHEATEAR (*Oenanthe oenanthe oenanthe*)**CASE 56.**

The Wheatear is an early spring migrant, arriving from North Africa about the middle of March and departing in September. Its favourite haunts are open downs, sandhills and heaths. Its partiality to insects and small snails renders it especially beneficial to agriculture. The nest is loosely constructed of dry grass and lined with rabbit's fur, hair and feathers, and is frequently placed in a rabbit burrow. Its pale blue eggs number from five to seven. The period of incubation lasts 14 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 1.]

COMMON WHITETHROAT (*Sylvia communis*)**CASE 57**

A widely distributed summer resident with a peculiarly jerky note is the Whitethroat, commonly found among hedges and thickets. Its food consists largely of insects supplemented by berries. It seeks out low bushes, hedge bottoms, brambles, etc., as nesting sites and builds a cup-like structure of dead grass and roots lined with hair. Four or five eggs are usually laid, the colour varying considerably. Common types have a greenish ground, finely speckled with ochreous and leaden spots, but this is by no means constant, markings ranging from big blotches to fine speckles and colour from oil-green to black are found. Incubation lasting 11-13 days is undertaken by both sexes. Two broods are often reared in a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.]

SONG THRUSH (*Turdus philomelos clarkei*)**CASE 58**

This well-known and widely-distributed resident species is found throughout the British Isles and, though many of our native birds migrate southward during the autumn, their place is taken by numbers of visitors from the continent. Its food consists principally of snails, worms, and various insects, including many injurious kinds, such as leather jackets and wire-worms, while fruit, both wild and cultivated, form part of its diet. The familiar nest, lined with mud, is generally placed in a thick bush or among ivy. From four to six eggs are laid early in the year, and are bright greenish-blue, spotted sparingly with black or purplish-brown. The period of incubation, which is chiefly by the hen, lasts 14 days. Two or three broods are reared in a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 1.]

MISSEL THRUSH (*Turdus viscivorus*)**CASE 59.**

Common throughout the British Isles, this resident species is well known from the habit of singing during the roughest weather. Fruit and berries of all kinds, as well as slugs, worms, ants and insects constitute its food. The nest is somewhat untidily finished, and is generally conspicuously placed in the fork of a tree at some distance from the ground. It is composed of bents, roots, and moss, with earth to solidify it. The exterior is sometimes decorated with lichens. The eggs, four to five in number, are greenish or tawny white, blotched with reddish-brown and lilac. Incubation, by the hen only, lasts 15 days. Two broods are frequently reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 1.]

BLACKBIRD (*Turdus merula*)**CASE 60.**

This fussy and familiar resident, with mellow and fluting song, is widely distributed throughout the British Isles. Fruit, of which it is often very destructive, worms, insects, and snails, form its principal diet. The nest, similar to that of the Thrush, but lined with dried grass instead of mud, is generally placed in bushes and hedgerows, and occasionally in tall trees. The eggs, four to five in number, are of bluish-green, thickly freckled with red-brown. Incubation takes 14 days. Several broods are reared during a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.]

LESSER SPOTTED WOODPECKER

(*Dryobates minor communis*)

CASE 61.

This small resident species often escapes notice as it keeps to the upper branches of trees more than trunks and limbs, in its search for wood-boring larvae and spiders. It is confined to England and Wales, and is somewhat local. Its nesting sites are generally found where there is plenty of old timber, especially in river valleys. The nest hole, often 70-80 feet from the ground, is usually bored in very soft and decayed wood, at the end of which a round nesting chamber is cut. The eggs, usually four to six in number, are white and glossy, with rather transparent shells. It is single brooded.

Lancashire and Cheshire: Scarce.

[Egg cabinet, drawer 6.]

WRYNECK (*Jynx torquilla*)**CASE 62.**

This summer resident is chiefly found in south-east England from March to September. A skulking and unobtrusive bird, it blends so well with tree-trunks and boughs in its woodland haunts that it is seldom seen. Although mainly arboreal, much of its food (ants, woodlice and spiders) is obtained on the ground. The name "Wryneck" is derived from its singular habit of twisting and stretching its neck. No nest is made, the six to ten eggs being placed in a hole in a tree or bank. It is single brooded.

Lancashire and Cheshire: A rare passing migrant.

[Egg cabinet, drawer 6.]

TREE CREEPER (*Certhia familiaris britannica*)**CASE 63.**

This is a common resident, and is distributed generally throughout the British Isles. The little mottled brown-backed bird would often escape notice but for its very

characteristic behaviour. Constantly hunting for insects, it will ascend a trunk of a tree by jerky leaps, fly to the foot of another tree and again ascend. A nest constructed of birch twigs, moss and roots, lined with feathers, is often placed behind the loose bark of a tree, or in crevices in loose stone walls. The eggs, usually six in number, are white spotted with light red and pale lavender. Incubation lasts 15 days. Two broods are sometimes reared.

Lancashire and Cheshire: Fairly common.

[Egg cabinet, drawer 5.

GREAT SPOTTED WOODPECKER
(*Dryobates major anglicus*)

CASE 64

This pied resident is found chiefly in England and Wales, but is gradually increasing in Scotland. It is more of a forest bird than the Green Woodpecker, especially where there is old timber. Larvae of wood-boring insects form its chief diet, but flies, beech-mast and hazel nuts are also consumed. In April a hole is excavated, which descends into a round chamber where, in a bedding of chips, five to six white eggs are laid. Only one brood is reared during a season. This case also contains part of a decayed trunk of a small tree showing the original excavations of a Greater Spotted Woodpecker. Apparently the nest was destroyed by the tree breaking off at that point. The birds then excavated another hole below the break, and this also weakened the tree trunk, causing another break.

Lancashire and Cheshire: It is widely distributed.

[Egg cabinet, drawer 6.

REED WARBLER (*Acrocephalus scripaceus*)
[See PLATE III.]

CASE 65

From April to September this small olive-brown summer resident haunts the reed-fringed lakes, ponds and streams of England, searching with restless activity among rushes, osiers and alders, etc., for aquatic insects on which it chiefly feeds. The nest, a compact cone-shaped structure built of dry grass, lined with fine grass, wool or hair, is generally suspended on reeds or on the slender branches of willows or alders, which are woven into the sides. Four or five greenish-white eggs, clouded and blotched with dark olive and ash, are laid mostly in June. The Cuckoo frequently places its egg in the nest of this species.

Lancashire: Uncommon.

Cheshire: Common on most meres, etc.

[Egg cabinet, drawer 2.



CASE 65.

THE REED WARBLER.



CASE. 66

THE BEARDED TITMOUSE.

BEARDED TITMOUSE (*Panurus biarmicus*)

[See PLATE IV.]

CASE 66.

This resident species is now almost confined to the Norfolk Broads, the draining of the reedy fens and meres having destroyed many of its former breeding grounds in the eastern and southern counties of England. Its principal food consists of the seeds of reeds, but in summer numbers of small, shell-bearing molluscs are also eaten. The nest, placed near the water among sedge and reeds, is composed of dry leaves of aquatic plants lined with the flowers of the reeds. The eggs, from five to seven in number, are white with short wavy lines and markings of purplish-brown. Incubation lasts 13 days. Two or three broods are produced.

[Egg cabinet, drawer 3.]

HEDGE SPARROW(*Prunella modularis occidentalis*)**CASE 67.**

This resident species is abundant and distributed generally over the whole of the British Islands. In the autumn a considerable migration from the Continent takes place, when large numbers arrive on our eastern coasts. In spring, return flights occur. This bird is equally at home in gardens, shrubberies, lanes, hedge-rows, copses and woods. It hops instead of running, and often indulges in spasmodic jerking of the wings. Its food is largely made up of small worms, seeds and insects. The nest, composed of twigs, moss, bents, leaves and roots, lined with hair, is commonly placed in a bush, hedgerow or stock heap. The eggs, from four to six in number, are deep blue without spots. The period of incubation lasts about 12 days. Two or three broods are produced in a year.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 2.]

WHINCHAT (*Saxicola rubetra*)

This summer resident is somewhat capriciously but widely distributed through Great Britain from April till the beginning of October, and is met with in some of the southern counties of Ireland. Insects, spiders, worms and small molluscs form its principal diet. Early in May, a loosely-constructed nest, formed of dry grass, fibrous roots and a little moss, lined with fine grass and hair, is placed on the ground among heather, bracken or long grass, and frequently sheltered by a small bush. The eggs, usually six in number, are greenish-blue, faintly dotted or zoned with rust red. Incubation, by the hen, lasts 13-14 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 1.]

STONECHAT (*Saxicola torquata hibernans*)**CASE 68**

Heather-covered moorlands and stony tracts of bracken, especially near the coast, are favourite haunts of this insectivorous resident. It is widely distributed throughout the British Isles, but it often abandons a locality after a few years. The nest is usually artfully concealed among heather or at the base of a gorse bush, and is built of fine bents and horse hair, with occasionally a little wood and feathers. The eggs are five to six in number, bluish-green in colour, and finely spotted with pale reddish-brown. Incubation is apparently by hen alone, and for 14 days. Two broods are usually reared during the season.

Lancashire and Cheshire: Common.

[*Egg cabinet, drawer 1.*]

REDBSTART (*Phoenicurus phoenicurus*)**CASE 69.**

From April to September this summer resident is sparingly distributed throughout Great Britain, occurring chiefly in the south. The bright, chestnut-red tail of this species is very conspicuous, and at once distinguishes the Redstart from any other bird. The diet consists of insects, fruits and berries. The nest, composed of dry grass, moss and rootlets, and lined with hair and feathers, is generally placed in a hole of a tree or stump, or loose stone wall. The eggs are five to seven in number, and are a delicate pale blue. The period of incubation, chiefly by the hen, lasts 14 days. Most birds are single brooded.

Lancashire and Cheshire: Widely distributed.

[*Egg cabinet, drawer 1.*]

CUCKOO (*Cuculus canorus*)

[See PLATE V.]

CASE 70.

This familiar summer resident is widely distributed throughout the British Isles. Arriving in this country in April, the males precede the females by a few days, and upon their arrival give utterance to their well-known call. The food consists of insects and their larvae, especially many destructive hairy caterpillars that are refused by most birds. It is parasitic on other species, placing a single egg in the nest, and generally removing one of the foster parents' at the same time. Each hen confines herself to a limited locality, and shows preference for some particular foster parent. Hedge Sparrow, Weed Warbler, Sedge Warbler, Meadow Pipit, and Wagtail, are often selected as hosts. The eggs laid by different individuals vary greatly in colour, sometimes resembling those of the

PLATE V.



CASE 70.

THE CUCKOO.

foster parent. The period of incubation lasts 12-13 days. The young Cuckoo ejects its companions from the nest, in which it remains alone for about 20 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 7.]

The male bird is being mobbed by Meadow Pipits (mobbing by smaller birds is common, probably because the Cuckoo is mistaken for a bird of prey). Both in size and colouration there is considerable resemblance between Sparrow Hawks and Cuckoos.

CASE 71.

The female is seen depositing her egg in the Meadow Pipit's nest. It is suggested that the egg is laid on the ground, and carried in the beak to the nest as seen in the group, the beak being specially adapted to hold the egg firmly, and yet without risk of damaging the tender shell. On the other hand, other observers state that the egg is conveyed to the nest by the claws. It is interesting to note that the egg may be a good match in colour with those of the foster parents. This may have been brought about by natural selection, as probably each individual Cuckoo always chooses the nest of the same species for all her eggs.

CASE 72.

The young Cuckoo is here seen occupying the nest of (a) the Hedge Sparrow, and (b) the Wagtail. In both instances the foster-mothers are shown conveying food to the usurper.

GREEN WOODPECKER

(*Picus viridis virescens*)

CASE 73.

This resident species is fairly well distributed over England and Wales, but is rare in Scotland and Ireland. It is usually found in well-wooded districts, but it may be met with some distance from trees in search of ants. Ants are its principal diet, but larvae of wood-boring beetles, millipedes, and even oats, acorns and berries have been recorded. In April, this bird selects a tree; a hole is then bored in the trunk, turning downward and widest at the bottom; in it five to seven white and glossy eggs are laid. Incubation, by both sexes, is said to last 16-18 days. Single brooded.

Lancashire: It is rare. Cheshire: Rather local.

[Egg cabinet, drawer 6.]

DIPPER (*Cinclus cinclus gularis*)

This resident species is unique as a diving insect-hunter among British perching birds. In the British Isles, this quaint bird frequents the fast-running rock-strewn streams of the hilly country. It swims and dives with equal facility, and sometimes may be seen walking below the water on the bottom of the pool, searching for water insects on which it feeds. The nest, an oval ball of moss and leaves, with an entrance at the side, is always placed near the water's edge, in a cavity near a waterfall, or under a bridge or similar position. Four to six white eggs are laid about the end of March. Incubation, by both sexes, lasts 14-16 days. Two or even three broods are reared a season.

Lancashire and Cheshire: Occurs on the hill streams.

[Egg cabinet, drawer 2.]

PIED WAGTAIL (*Motacilla alba yarrellii*)

This familiar resident is widely distributed throughout the British Islands. It is almost exclusively a ground bird, frequenting the water side and the adjoining meadows, where it often attends the cattle and feeds on the insects they disturb. The nest, made of moss, dried grass and fibrous roots, lined with hair and feathers, is usually placed in holes of walls, sheds, steep banks, woodstacks and pollard willows. The eggs, generally five to six, are greyish-white, spotted and streaked with ash brown. Incubation, chiefly by the hen, lasts 13-14 days. Two and sometimes three broods are reared during the season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 3.]

SWALLOW (*Hirundo rustica*)

This graceful and familiar summer resident is distributed generally throughout the British Isles from April until October. Insects taken on the wing form its diet. The open saucer-shaped nest built of mud, and lined with feathers and dry grass, is usually placed on the horizontal joists which support the rafters of a barn. The eggs, numbering five to six, are white spotted finely or sometimes boldly with red-brown and ashy shell marks. The period of incubation, lasts about 14 days. Two and often three broods are reared in a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 4.]

CASE 74.**HOUSE MARTIN** (*Delichon urbica*)**CASE 76.**

From the beginning of April until October, this summer resident is distributed throughout the British Isles. Its food consists of insects which are captured on the wing. The mud nest, shaped like half a cup and lined with bits of straw and feathers, is often attached to the outer walls of a house, generally under the eaves, and is entered by a hole in the rim. Martins return to the same nesting site year after year, the old nests being renovated. Four or five white eggs are the usual number laid. Incubation lasts 14 days. Two and sometimes three broods are reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 4.]

CASE 75.**SWIFT** (*Micropus apus*)**CASE 77.**

This insectivorous summer resident is common and widely distributed throughout the British Isles. The Swift appears on our shores about the end of April, or early in May, and the main body of birds leave this country towards the end of August. The bill is very short, but the gape very wide, and it is well adapted for capturing insects while flying swiftly through the air. Favourite nesting sites are under the eaves of thatched cottages, in crevices in rocks, cliffs and old ruins. The nest is composed of straw, hay, feathers, and cobwebs, the components being glued together by a viscid fluid secreted by the bird. Two oval, white eggs are laid about the end of May. Incubation lasts 18 days. One brood is reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 6.]

CASE 76.**SAND MARTIN** (*Riparia riparia*)**CASE 78.**

A summer resident, arriving towards the end of March and departing by the end of September, it is generally, though locally, distributed in colonies all over the British Isles. This species feeds entirely on insects captured while flying. It is gregarious, nesting in colonies in sand-banks, cliffs, gravel-pits and banks of rivers. The nest is placed at the end of a burrow excavated by the bird; the burrow varies in length from two to three or four feet. The nest is carelessly built of straw and freely lined with feathers. Four to five dull white eggs are usually laid in May. Two broods are generally reared.

Lancashire and Cheshire: Common but local.

[Egg cabinet, drawer 4.]

KINGFISHER (*Alcedo atthis ispida*)**CASE 79.**

This handsome resident is distributed generally in suitable localities in Great Britain, except north of the Grampians, where it is rather rare. In Ireland, it is scarce in all parts. During summer months, the Kingfisher frequents rivers, streams, lakes and dykes. In the autumn and winter, many birds travel to the coasts where they haunt tidal estuaries and marshes. Fish, which are secured by a sudden plunge from some convenient perch above the water, aquatic insects and shrimps form its principal diet. The nesting place, which is a hole, some two or three feet in length, in the bank of a river, is generally excavated upwards to prevent flooding. In the enlarged end of the tunnel a collection of fish bones and disgorged pellets is placed, on which are laid six to eight glossy white, rounded eggs.

Lancashire and Cheshire: Not uncommon.

[Egg cabinet, drawer 6.

TAWNY OWL (*Strix aluco sylvaticus*)**CASE 80.**

This nocturnal resident is distributed generally throughout Great Britain. It is the Brown Owl of the woods, whose hollow, moaning "Too-hoo-oo!" may be heard at evening in most wooded districts. During the day, this species remains concealed in some hollow tree trunk, and appears to dislike the sunlight more than any other British Owl. A very useful bird, preying chiefly on voles, rats, mice and small birds, it makes no nest, breeding in holes in trees, or old nests of the Magpie or the Heron, and occasionally in a rabbit burrow. The eggs, two to four in number, are smooth, white, are nearly round in shape, and are sometimes laid as early as February. Incubation takes about 28 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 7.

BARN OWL (*Tyto alba*)**CASE 81.**

This useful sentinel of the night is found throughout the greater part of the British Isles, but is scarce in the north. To secure its favourite food, the bird makes nocturnal raids on stackyards, and regularly quarters pastures and fields in order to prey upon different kinds of mice, which would otherwise overrun the land and ruin agriculture. Sparrows and other small birds are also taken. It spends the day in ruins, church towers, barns, hollow trees, and house roofs, seldom going abroad before nightfall. When disturbed, it emits a loud hiss and expresses anger by snapping its bill.



CASE 82.

THE LONG-EARED OWL.

No nest is made, the four to six white eggs being laid on the floor of a hole in a tree or in a dark corner of a belfry or barn. The male does not assist in the incubation of the eggs, which lasts about a month, but is present in the nest hole, differing in this respect from the Tawny Owl. Pellets, containing the indigestible portions of their food, which have been rejected through the mouth, are generally to be found in abundance near any place they frequent.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 7.]

LONG-EARED OWL (*Asio otus*)

[See PLATE VI.]

CASE 82.

A woodland resident, especially partial to fir plantations and small clumps of conifers. This Owl, owing to its nocturnal habits, is seldom seen by day. Its breeding sites are various, such as old squirrel dreys, or nests of the Magpie, or the Wood Pigeon, and also occasionally in heather in quite open country. It is a bird of economic value, by virtue of its food, which consists chiefly of mice, rats, voles, and small birds. The eggs, normally four to five, are white, without a high gloss. Incubation takes from 25 to 30 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 7.]

KESTREL (*Falco tinnunculus*)

[See PLATE VII.]

CASE 83.

This resident species, often called the Windhover, from its habit of hovering almost motionless head-to-wind, is the most plentiful of the British Falcons, being common throughout the British Isles. Insects form its chief food, especially the destructive cockchafer and daddy-long-legs, though mice and voles are also readily eaten. The Kestrel does not construct its own nest, but occupies the old nest of some other large bird, that of the Carrion Crow being frequently selected. Cliff ledges are also commonly used. The eggs, laid in May, number from four to seven. The ground colour is usually white, freely washed or blotched dark red-brown. Incubation is chiefly by the females, and takes 27-28 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 8.]

MERLIN (*Falco columbarius aesalon*)

CASE 84.

This is a resident species distributed generally throughout the British Isles, and is the smallest of our Falcons. It hunts with a bold and dashing flight, preying on small birds,

especially Meadow Pipits. On account of this extremely rapid flight, the Merlin is a favourite with falconers, and is frequently trained to take Larks. Moorlands and mountainous districts are favoured as nesting sites, where a mere apology for a nest, consisting of a few heather stalks and grass is placed on the ground, but occasionally an old nest of the Crow or rocky ledge is used. The eggs, laid in May, are normally four, and are thickly and evenly stippled with purplish-brown to red-brown. Incubation is by both sexes, but chiefly by female, and lasts 29-30 days. Single brooded.

Lancashire and Cheshire: Frequent on moorlands.

[Egg cabinet, drawer 8.

SPARROW HAWK (*Accipiter nisus*)

CASE 85.

This rapacious species is widely distributed throughout the British Isles, showing a strong preference for well-wooded areas. It hunts small birds by stealthy, albeit very rapid flight, gliding just above the ground on outskirts of woods and along hedgerows, frequently topping bushes to snatch an unsuspecting victim from its perch. It usually constructs a nest of sticks, lined with twigs and often placed upon the top of an old nest of some other species, near the main stem of a tree at a considerable height above ground. The eggs vary from four to six in number, and are pale bluish white, blotched with reddish-brown. Incubation is performed by the female alone, and lasts about 35 days. Only one brood is reared during a season.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 9.

GOLDEN EAGLE (*Aquila chrysaëtus*)

CASE 86.

Owing to its depredations, this grand bird has been killed off throughout the greater part of the British Islands, until now it breeds only by sufferance in the Scottish Highlands. During exceptionally cold seasons it sometimes visits the south of Scotland and, very rarely, England. It feeds chiefly on mountain hare, grouse, and ptarmigan, occasionally taking lambs, fawns, and young red-deer. The nest, a large platform of sticks and dead heather, lined with tufts of eagle-grass and bits of Scotch fir, is usually placed on a ledge of a cliff, sometimes in a tree or, more rarely, on the ground. Two, or sometimes three greyish-white eggs, blotched with reddish-brown and lilac, are laid in April. The period of incubation lasts 30-35 days. Only one brood is reared during the season, the young remaining in the nest for about 11 weeks.

Lancashire: One recorded at Furness Abbey in 1815.

[Egg cabinet, drawer 12.



CASE 83.

THE KESTREL.

PEREGRINE FALCON (*Falco peregrinus*)**CASE 87.**

This resident species breeds on the maritime cliffs and inland precipices of the British Isles, but out of the nesting season occurs in a variety of places, such as marshes, estuaries, and open moors. In autumn, many northerly bred birds pass through Great Britain on migration. On the wing this falcon is the embodiment of speed and strength, and has long been considered the best bird for falconry. The Peregrine preys on larger birds than its congeners, with swift headlong swoop soon overtaking duck, pigeon, grouse, as well as seafowl of various kinds. No nest is made, either a slight hollow scratched in the soil on some overhung ledge of an inland rock or sea-cliff, or an old nest of some other bird, such as the raven or heron being used. The eggs, which are two to four in number, are generally covered with reddish-brown markings, varying from tawny-orange to deep red. As is the case with other birds of prey, the female is much larger than the male. The period of incubation, chiefly by the female, lasts four weeks. Only one brood is reared during a season. It is chiefly a visitor during migration.

Lancashire and Cheshire: A passage visitor.

[Egg cabinet, drawer 8.

COMMON BUZZARD (*Buteo buteo*)**CASE 88.**

Though greatly persecuted, this resident bird is still to be found as a breeding species in the Lake District of England, and the wilder parts of Scotland and Wales. Its flight in passing from place to place looks slow and heavy, but its great wing power appears to advantage when the bird soars, as it often does for hours at a stretch, and its appearance then is very characteristic. The food consists chiefly of small mammals, but reptiles, small birds and insects are also taken. A pile of sticks, lined with dry grass, wood decorated with leaves, and green boughs of larch or other tree, is either built in a tree or placed on the ledge of a cliff. Three or four greyish-white eggs, blotched with reddish-brown or lilac, are usually laid in April. Incubation, chiefly by the female, often begins with first egg, and may last 31-38 days. Only one brood is reared in a season.

Lancashire and Cheshire: Occasional visitor.

[Egg cabinet, drawer 9.

OSPREY (*Pandion haliaetus*)**CASE 89.**

The Osprey was formerly a summer resident in several places in the north of Scotland, but is now apparently extinct as a breeding species. In England this species is a rare but

nevertheless regular passage migrant during the spring and autumn. The Osprey feeds almost exclusively on fish, such as sea trout, bream, perch, roach, and carp, but when pressed by hunger has been known to take chickens. The feet of this species are well adapted for fishing, the reversible fourth toe, spiky soles, and long sharp talons enabling it to hold its slippery prey in a firm grip. The large nest of sticks, heather stems and seaweed, is either built in a tree or placed on the ledge of a cliff in the neighbourhood of a loch. The eggs, two to three in number, are extremely handsome, their white ground being spotted and blotched deep chocolate, or red-brown, with underlying patches of pale purple-grey. The period of incubation lasts about four weeks. Only one brood is produced in a season.

Lancashire and Cheshire: A rare visitor during migration.

[Egg cabinet, drawer 9.]

WHITE-TAILED EAGLE

(*Haliaëtus albicilla albicilla*)

CASE 89

In the British Isles this handsome bird no longer occurs as a breeding species. It is only known now as a rare migrant to our most maritime counties, and such visitors are usually immature. It preys upon fish (salt and fresh), carrion, seabirds, rabbits, poultry and lambs. The nest, a mass of sticks lined with moss, grass and wood, is often placed on a cliff ledge, by the sea or exceptionally on rocky ground on islands. The eggs, normally two, but one only in the case of old birds, are white in colour, and often stained, but rarely show any trace of true markings. Both sexes take part in incubation, which lasts thirty-five days. Only one brood is reared in a season.

Lancashire and Cheshire: Very occasional visitor.

[Egg cabinet, drawer 9.]

CORMORANT (*Phalacrocorax carbo*)

CASE 90

This resident species is found on all coasts and estuaries of the British Isles. It is often a conspicuous object in the Mersey Estuary, standing erect on some sandbank or buoy with wings displayed. Its chief diet is salt-water fish, but occasional raids are made on inland trout hatcheries where much damage is done. In spring, colonies of these birds gather on ledges of cliffs and small islands, both inland and off the coast, and in some cases in trees. The nest, when placed on a rock ledge, is built chiefly of seaweed, but if it is in a tree, heather, sticks and grass are used. The eggs, usually three or four, are soft and chalky in texture, with pale blue undershell



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THE GANNET.

CASE 92.

almost concealed with a chalky white deposit on the surface. Incubation is by both sexes, and takes 28 days.

Lancashire and Cheshire: A regular visitor to coast and inland waters.

[*Egg cabinet, drawer 10.*]

CASE 91

This is a resident species and is common along the rugged coasts of the British Isles. This greenish-black plumaged bird is an expert diver, feeding almost entirely on sea-fish. The nest, formed mainly of sea-weeds, often in an advanced stage of decay, sticks, heather and grass, is often placed on a ledge of a cliff or sometimes among fallen boulders on the beach. The eggs, normally three, have a pale blue undershell overlaid with an irregular layer of chalky-white deposit. Incubation is by both sexes, taking 24-27 days. The young are fed in a curious manner. The parent having filled its gullet with fish, returns to the nest and bends over the inmates opening wide its bill, and the young in turn thrust the head and neck down the old bird's throat and extract the partly digested food until the pouch is empty.

Lancashire and Cheshire: A visitor to the coast and estuaries.

[*Egg cabinet, drawer 10.*]

CASE 92

GANNET (*Sula bassana*)
[See PLATE VIII.]

Throughout the winter months, this handsome bird with its dazzling white plumage is found on the open seas surrounding the British Isles, and may often be seen off the Mersey plunging for fish, its principal food. In spring it repairs in countless numbers to some isolated rock to breed. The most noted nesting colonies are the Grasholm (Pembroke), Bass Rock (Forth), Ailsa Craig (Clyde), St. Kilda Isles, and the Bull Rock (Cork). The nest of seaweed and grass contains only one egg, which is pale blue, overlaid with a chalky white coating. Both parents take part in incubation, which lasts for 42-45 days. They are single brooded.

Lancashire and Cheshire: A frequent visitor to the coast.

[*Egg cabinet, drawer 10.*]

CASE 93

COMMON HERON (*Ardea cinerea*)

This gaunt, long-legged resident is distributed generally throughout the British Isles. During the winter, solitary birds may be seen standing motionless in the shallows of estuaries or inland waters, waiting for any unwary water life that may come within reach of their spear-shaped bills. During

the breeding season, it is usually met with in colonies, known as heronries. The nests are generally placed on the tops of high trees, sometimes on sea-cliffs and occasionally on the ground. They are large flat structures, formed of sticks and lined with roots and dry grass. From three to five bluish-green eggs are laid in March or, in mild seasons, in February. Both sexes take part in the incubation, which lasts about 26 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 10.]

GREY-LAG GOOSE (*Anser anser*)

This is the only species of wild goose nesting in the British Isles, and the source from which our domestic race has sprung. It breeds in Scotland, being known elsewhere only as a winter visitor. Grass is largely eaten in the spring, and grain in the autumn. The nest, composed of reeds, moss and dry heather with a good deal of down, is often placed among rushes or in deep heather near the edge of a loch. The yellowish-white eggs usually number from four to seven. The males take no part in the incubation, which lasts 28 days. Only one brood is reared during a season.

Lancashire and Cheshire: Chiefly seen when on migration.

[Egg cabinet, drawer 12.]

RED BREASTED Merganser

(*Mergus serrator*)

This slim, saw-billed duck, with feet set far back (always an indication of exceptional swimming and diving powers), visits our coasts in considerable numbers during the winter, but in the north and west of Scotland and Ireland it breeds freely. Its food is mainly fish, although crustacea and worms are also eaten. Sea coasts, lakes and rivers are favoured as nesting sites. The nest, usually hidden in long grass, or rank herbage, is lined with drab-coloured down plucked from the bird, on which seven to ten greenish-buff eggs are laid. Incubation lasts about 28 days—the female alone sitting. Single brooded.

Lancashire and Cheshire: Regular coastal visitor.

[Egg cabinet, drawer 14.]

COOT (*Fulica atra*)

This duplicate case of the coot is shown because of its historical interest. It is the first case of its kind, mounted in order to show the characteristic habitat of the species. It was prepared in 1865, and was exhibited at the British Association Meeting, held in Birmingham the same year.

TEAL (*Querquedula crecca*)

CASE 97

The small size of this resident duck at once distinguishes it from any other members of the group. Widely distributed over the British Isles, it frequents estuaries and mudflats during the winter, and moorland pools and peat mosses in the nesting season, where seeds of aquatic plants, duckweed, insects, worms and fresh-water mollusca are plentiful for food. The nest, composed of grass and leaves and lined with blackish down, is often placed in coarse grass or heather on the fringe of a marsh. From eight to fourteen creamy-white or pale buff eggs are laid early in May. Incubation is by female alone, and takes 22 days. Single brooded.

Lancashire and Cheshire: Common but local.

[Egg cabinet, drawer 13.]

DUNLIN (*Erolia alpina*)

CASE 98.

Our commonest shorebirds, during the winter months, huge flocks of these little waders may be seen on our local sandbanks searching with restless energy for shrimps, sand-hoppers, molluscs and small crustacea on which it feeds. For nesting sites, moorlands and rough pastures are favoured, where a neat cup-shaped nest made of dry bents is well hidden in a tussock of grass. The eggs, normally four in number, are blue-green to yellowish in ground colour, blotched or spotted with chocolate brown and ashy-grey shell marks. Incubation, which is by both sexes, lasts 22 days. It is probably single brooded, but eggs are found up to July.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 21.]

LAPWING OR PEEWIT (*Vanellus vanellus*)

CASE 98

In the British Isles this widely distributed and resident plover is most conspicuous in the spring, when tossing and tumbling in fantastic aerial love flight. The farmer has no better friend than the Lapwing, as its food is composed chiefly of insects that are very damaging to his crops. In autumn, large numbers arrive from the Continent, and assemble in huge flocks, which increase in number during the winter and disperse again at the approach of spring. The favourite breeding haunts are rough pastures in fallow lands, where a slight hollow lined with a few bents forms a nest. The eggs, usually four in number, are thickly blotched or spotted with deep black on a clay or bluish-grey ground. The period of incubation, chiefly by the hen, lasts 25-28 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet drawer 20.]

GOLDEN PLOVER*(Pluvialis apricarius apricarius)***CASE 98**

In the British Isles this resident species is much more plentiful during the autumn and winter months, owing to the very large number which arrive from the Continent during the autumn. A return migration takes place in March. The Golden Plover breeds on the moors throughout the British Isles, but is scarce in the southern counties. From Derbyshire northwards it becomes more abundant, and on the moors of the northern islands it is common. It feeds on moss and berries of moorland plants, insects, mollusca, earthworms and beetles. The nest is a depression in the turf, scantily lined with grass, heather, twigs and lichen. The eggs, four to six in number, vary in ground colour from pale ochre to olive-brown, spotted and blotched with purplish-grey and rich-brown. Period of incubation, 27 days.

Lancashire and Cheshire: Common passage migrant, also nests, in the hills.

[Egg cabinet, drawer 20.

COMMON SNIPE (*Capella gallinago*)

This is a common and well-known resident species in all marshy localities throughout the British Isles. It is more numerous during the winter months, when large numbers of the birds arrive from the Continent and often remain until spring. Its diet is largely of worms, especially dew worms and small red species, diptera and their larvae, mollusca. The nest, a mere depression in the ground, slightly lined with grass, is generally situated among rushes, grass or heather. The eggs, normally four in number, are greenish-buff, obliquely spotted and blotched with various shades of sepia and shell-marks. Incubation lasts 19-20 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 20.

MALLARD OR WILD DUCK (*Anas platyrhyncha*) **CASE 99**

[See PLATE IX.]

This resident species is the commonest of our fresh-water ducks, breeding throughout the British Islands. During the winter months its numbers are greatly increased by migrants from the Continent. It feeds chiefly by night in fields, marshes and swamps, leaving the security of lake or sea at dusk, to return at dawn. The food consists of grain, seeds, small mollusca, frogs, aquatic insects and plants. The nest, composed of down and feathers mixed with leaves, is often placed in a depression in the ground near water, but also at times in

PLATE IX.

CASE 99.

THE MALLARD OR WILD DUCK.

pollard willows, and ivy-covered ruins. From seven to thirteen dull green eggs are laid early in May. The male takes no part in the incubation, which lasts 26 days.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 11.

EIDER DUCK (*Somateria mollissima*)

CASE 100

This handsome sea-duck is only known as a winter visitor to the southern and western coasts of England and Wales, but it breeds in Northumberland, Holy Isles, Farne Isles, east and north-west coasts of Scotland, and on an island off the coast of Donegal, Ireland. Its food is almost entirely animal, and is obtained by diving—mussels, periwinkles, razor-shells, crabs, starfish and sea-urchins are all taken. The nest, often placed among scanty vegetation and sheltered by rocks, is composed of dried stems plentifully lined with brownish-grey down, plucked from the female as incubation proceeds. Five to eight greenish-grey eggs are laid. Incubation, by the female alone—the drakes leave as soon as ducks begin to sit—takes 27-28 days.

Lancashire and Cheshire: A rare winter visitor.

[Egg cabinet, drawer 16.

COMMON SANDPIPER (*Tringa hypoleucus*)

CASE 101.

This summer resident is, from April to September, distributed generally throughout the British Isles, except in the southern and eastern counties of England, where it is rather scarce. Its favourite haunts during the nesting season are mountain tarns and streams, where worms, water-beetles, sandhoppers and fresh-water shrimps may be obtained. The higher ground is deserted as soon as the young can fly, and from July to September this bird is found on the estuaries and coastal marshes. The nest is merely a slight hollow in the ground, lined with grasses and flood wrack, in which four creamy-buff eggs, spotted with reddish and darker brown, are laid. Incubation, chiefly by the female, 21-23 days. Single brooded.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 21.

REDSHANK (*Tringa totanus*)

CASE 101

This restless, red-legged wader is distributed generally throughout the British Isles, both on the coasts and inland marshes. Though a resident, greater numbers of this bird are met with at the time of migration. Marine worms, mollusca

and crustacea form its chief diet. During April, many take to the moist meadow-land and moorland, where a hollow in a tuft of grass serves as a nest. The eggs, which are usually four in number, are of a straw colour, spotted and blotched with reddish-brown and grey. Incubation, chiefly by the hen, lasts 23-25 days.

Lancashire and Cheshire: Generally distributed.

[Egg cabinet, drawer 21.]

SHELD DUCK (*Tadorna tadorna*)

CASE 102.

This resident, boldly plumaged duck is not uncommon on suitable parts of the coast, where low-lying sand-hills and mud-flats prevail. It feeds on mollusca, crustacea, vegetable matter and marine insects. The plumage of the sexes is very similar, but the colours of the female are less bright than those of the male. The nest, composed of bents with a lining of down from the bird itself, is usually placed seven or eight feet from the entrance of a rabbit burrow. From seven to twelve cream-coloured eggs are laid in May. The male takes no part in the incubation, which lasts from 24 to 30 days, but when the young are out both parents attend them.

Lancashire and Cheshire: Fairly abundant.

[Egg cabinet, drawer 11.]

OYSTERCATCHER (*Haematopus ostralegus occidentalis*)

CASE 103

This handsome black-and-white resident is common on the coasts of the British Isles throughout the year. During rough wintry weather, large flocks of these waders may often be seen on our local sandbanks, standing closely packed with head to wind, no doubt migrants from the continent. Its food consists chiefly of mussels, limpets and whelks, which are extracted from their shells by the powerful orange beak. Sandhills and shingle wastes near the sea are favoured as nesting sites. No nest is made, but sometimes pieces of shell or stones are arranged in a nest hollow. The eggs, usually three in number, are pale-brownish buff, spotted and streaked with dark-brown and ashy-grey. Incubation is shared by both sexes, and lasts 21-24 days. Single brooded.

Lancashire and Cheshire: Common on coasts.

[Egg cabinet, drawer 20.]

HERRING GULL (*Larus argentatus*)

CASE 104

This familiar resident is more evenly distributed as a nesting species than any other gull breeding in the British Isles. Although useful locally as a scavenger, it is a great robber of eggs and destroyer of young birds during the

breeding season. Molluscs, crustaceans, turnips, potatoes, young rats, voles and grain all form part of a varied diet, which the pellets exhibited in the group indicate. It nests in colonies, on precipitous cliffs and grassy islands. The nest, often rather bulky, is built of grass and seaweed, in which two or three olive-green or stone-coloured eggs, spotted and blotched with dark brown and grey, are laid.

Exhibits of the various changes of plumage of this Gull, from chick to the adult plumage of a five-year-old gull, may be seen in Case No. 131.

Incubation is shared by both sexes, and lasts 24-28 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 22.]

COMMON GULL (*Larus canus*)

CASE 105

Although this resident gull is widely distributed around the coasts of England and Wales during the winter months, it very rarely breeds here. In April the majority of the birds leave for Scotland and Ireland, where large colonies are formed on low coasts and fresh water lochs. A varied diet of small mammals, carrion, small birds, grain, insects, slugs and vegetable matter is eaten. The nest, built of heather, dead grass and seaweed, is placed on the ground among coarse herbage, in which two or three eggs, varying in colour from dark to light olive, blotched, spotted and streaked with dark umber-brown, are laid. Incubation is undertaken by both sexes, the period being unknown. Single brooded.

Lancashire and Cheshire: Common in winter.

[Egg cabinet, drawer 22.]

GREAT BLACK-BACKED GULL (*Larus marinus*)

CASE 106

This predaceous species, the largest of our resident gulls, is to be met with at all seasons on our British coasts. On the south and west coasts of England and Wales it breeds only in small numbers, but it is common in many parts of Scotland and Ireland, either in pairs or in small colonies. It feeds largely on animal food, attacking sickly sheep and lambs, devouring the eggs and young of game birds and water fowl, as well as carrion. On account of their predatory habits, large numbers are annually destroyed. The roughly constructed nest of seaweed and dry grass is usually situated on some isolated stack of rock. The eggs, two or three in number, are brownish-buff, blotched and spotted with amber-grey. Incubation, by both sexes, lasts 26-28 days. Single brooded.

Lancashire and Cheshire: Regular visitor.

[Egg cabinet, drawer 23.]

LITTLE TERN (*Sterna abifrons*)**CASE 107**

This, the smallest of our terns, arrives early in May and leaves in September or early in October. Its food is similar to that of the Common Tern. The breeding stations on the flat, sandy or shingly shores, are scattered along the coasts of the British Isles. Two or three stone-coloured eggs are laid towards the end of May in hollows in the sand or shingle. Incubation, by both sexes, lasts 20-22 days, one brood being produced.

Lancashire and Cheshire: Resident, and passage migrant.

[Egg cabinet, drawer 22.]

ARCTIC TERN (*Sterna macrura*)**CASE 107.**

This graceful migrant visits the British Isles from April to October. Social in habits, colonies of various sizes are scattered throughout many parts of the coast. This Tern is rather less partial to fresh water than the Common Tern, although it has some inland breeding quarters. Its food is mainly sand-eels, young coal-fish, etc. The nest is merely a depression in sand or shingle, with or without a few bents, in which two or three buffish or greenish-grey eggs, lightly spotted with dark brown-grey, are laid. Incubation, shared by both sexes, lasts 20 days. Single brooded.

Lancashire: A summer resident. Cheshire: A passing migrant.

[Egg cabinet, drawer 22.]

COMMON TERN (*Sterna hirundo*)**CASE 107.**

This summer migrant reaches our coasts towards the end of April and returns to the south between August and October. On the wing, no bird equals the Tern for elegance of form or grace of motion. The food consists mainly of small fish, such as herrings, whiting, coal-fish, sand-eels, and crustacea, and, like the Arctic Tern, it may be seen constantly plunging headlong into the sea in pursuit of its prey. Shingle banks, salt-marshes and sand-dunes are favoured by colonies of these birds, where a mere depression in the ground serves as a nest, in which two or three greenish-grey or stone-buff eggs, spotted and blotched with dark brown and grey, are laid. Incubation lasts 20-22 days, both sexes taking part. The eggs and young in this group are an excellent example of colour protection.

Lancashire and Cheshire: Fairly common on the coast.

[Egg cabinet, drawer 22.]



THE RINGED PLOVER

CASE 107.

P.55.

RINGED PLOVER (*Charadrius hiaticula*)

[See PLATE X.]

CASE 107.

From autumn to spring considerable numbers of these sociable little residents may be seen associating with Dunlin and other small waders, searching for molluscs, worms and crustacea on the shores of the Mersey Estuary. Stretches of sand and shingle are favoured as a nesting site, where a slight hollow or scrape, lined with bits of shell or small pebbles, form a nest. The eggs, usually four in number, are commonly pale stone-buff in colour, finely spotted with brown-black. Incubation is by both sexes, and takes 21-25 days. Two broods are usual.

Lancashire and Cheshire: Nests on coast locally.

[Egg cabinet, drawer 20.]

LESSER BLACK-BACKED GULL(*Larus fuscus affinis*)**CASE 108**

This well-known summer resident is easily distinguished from the Great Black-backed Gull by its smaller size and yellow feet. Almost omnivorous in diet, it devours carrion, mollusca, worms, insects, barley, fish, and young and eggs of sea-birds. It nests in colonies on moors, grassy cliffs and flat-topped islands, on all coasts of the British Islands. The nest is composed of any material at hand, such as heather, grass or seaweed. The eggs, normally three in number, are in colour from pale greenish-blue to dark umber-brown, usually spotted and blotched with blackish-brown. Incubation is by both sexes, and takes 21 days. Single brooded.

Lancashire and Cheshire: It is fairly abundant on coast.

[Egg cabinet, drawer 23.]

KITTAWAKE (*Rissa tridactyla*)**CASE 109**

This black-footed resident is more strictly maritime than any other of our gulls. Although distributed generally on the coasts of the British Isles, it is not often seen in the winter except when storm-driven. Its diet consists chiefly of small fish, although crustacea and vegetable matter are also consumed. The nesting sites chosen are high, rugged sea cliffs, such as the Farne Isles, Bass Rock, Flamborough Head, the Isle of Man and North Wales. It is interesting to note that the nestling of this species is grey, and not mottled like most gull chicks. The nest, built of moss, grass and seaweed, is neatly constructed with a well-defined cup, in which are laid two or three pale buff eggs, spotted with reddish brown and ash-grey. Incubation, by both sexes, takes 26 days. Single brooded.

Lancashire and Cheshire: Occasional visitor.

[Egg cabinet, drawer 23.]

BLACK-HEADED GULL (*Larus ridibundus*)**CASE 110**

Throughout the British Isles this resident is common and widely distributed. Flocks of these birds follow the plough, cleaning each furrow of destructive pests, such as the larvae of cockchafers, craneflies, sawflies, wireworms, etc. In the spring they resort to marshes and swamps for nesting purposes, often congregating in large colonies called "gulleries." The nest, a carelessly built structure composed of any available vegetation, is placed among sedge or rushes. The eggs, usually three in number, vary in colour from olive-brown to pale greenish-blue, and are blotched, speckled and streaked with dark brown and leaden grey. Incubation is by both sexes, and takes 23-24 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 23.]

BLACK-THROATED DIVER (*Colymbus arcticus*)**CASE 111**

This species is fairly common during the breeding season about the larger lochs of the north and west of Scotland, and is occasionally found in the winter off the coasts of England and Ireland. During the winter, the plumage is entirely different from that of the spring, for after the autumn moult the upper parts become ashy-brown and the under parts white. Though slow and awkward on land, it is an expert diver, often travelling long distances under water in pursuit of fish, which form its principal diet. The nest, usually of flattened herbage near the water's edge, contains two olive-brown eggs, spotted with black. The period of incubation lasts for 28 days, both sexes taking part. Single brooded.

Lancashire and Cheshire: Occasionally seen off shore.

[Egg cabinet, drawer 24.]

RED-THROATED DIVER (*Colymbus stellatus*)**CASE 112**

This is a common winter visitor to all our coasts, and often ascends rivers and visits inland lakes. The red throat and grey face and neck are the outstanding features of the summer dress, the white throat being characteristic of the winter plumage. When nesting, this species often prefers quite small pools and lochs. In the British Isles it is only known to breed in the north of Ireland and parts of Scotland and the adjacent islands. Its diet is mainly fish, such as herring, coal-fish, flounder and sand-eel, with the addition of insects and crustacea. Little or no nest is made, and the two large olive-brown eggs, spotted with dark brown, are placed on the bare ground close to the water's edge. Incubation, shared by both sexes, 24-28 days.

Lancashire and Cheshire: Fairly common off shore in winter.

[Egg cabinet, drawer 24.]

PUFFIN (*Fratercula arctica*)**CASE 113**

This quaint-looking resident is seldom seen during the winter, as it frequents the open seas where small fish form its principal diet. Puffins breed in colonies, occupying natural crevices or burrows excavated by themselves in the turf cap of some rocky headland or island. Many birds, however, do not prepare a new hole, returning to that occupied the previous summer, and a good deal of quarrelling often takes place for the possession of burrows. The nest is scanty, a few bits of grass and feathers placed on the floor of the burrow, on which is laid one dull-white egg, with a zone of grey or brown spots. Incubation, by both sexes, lasts 36 days. Single brooded.

Lancashire and Cheshire: Frequently driven by storm.

[Egg cabinet, drawer 25.]

MOORHEN (*Gallinula chloropus*)**CASE 114**

This familiar resident species frequents lakes, ponds, streams and rivers throughout the British Isles. It swims well, with a characteristic bobbing action, and dives on occasion. Its food is chiefly vegetable, but slugs, worms and insects are also eaten. The nest, often placed among aquatic plants, in water or near the water's edge, is generally built of reeds, flags or sedge. The eggs, from seven to nine in number, are pale buff, spotted with reddish-brown and dull lilac. The period of incubation is variable, usually 20-22 days. Two or three broods are reared in a season.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 19.]

LITTLE GREBE (*Podiceps ruficollis*)**CASE 115**

It is distributed generally throughout the British Isles, but is less plentiful in the north of Scotland. Sluggish rivers, reedy ponds, and rush-fringed lakes are this tailless little diver's favourite haunts, where fish, insects, molluscs and vegetable matter form its principal diet. The nest, a bulky floating mass of decaying aquatic plants, is often placed in a clump of rushes, in which four to six creamy-white eggs are laid. In winter, the chestnut colouring on the sides of the neck and head is replaced by white, the crown is brown, and the under parts of the body are much paler. Incubation lasts from 18 to 20 days, and is shared by both sexes.

Lancashire and Cheshire: Fairly common.

[Egg cabinet, drawer 24.]

GREAT CRESTED GREBE (*Podiceps cristatus*)

[See PLATE XI.]

CASE 115

This resident species has greatly extended its breeding range during recent years. It now rests on many suitable meres in various parts of England and Ireland, but is less common in Scotland and Wales. In winter, it is to be found in many places on the British coasts. Its food consists mainly of small fish, but newts, frogs, tadpoles and crustaceans are also taken. The nest is a floating mass of wet, decaying, aquatic vegetation, and is usually placed in the reed beds of a large mere. The four or five eggs are white when fresh, but soon become stained brown from contact with the decomposing vegetable matter on which they are laid. This bird has an instructive habit of covering her eggs with shavings made from the surrounding bulrushes, when she leaves the nest. These shavings are prepared by the bird, when sitting on the eggs, and in this group the heap of shavings and stumps from which they have been taken are shown. After the autumn moult, the crest and tippet disappear, the top of the head and back of the neck become brown, and the throat and fore-neck silvery white. Both parents take part in the incubation of the eggs, which lasts about four weeks. Occasionally two broods are reared.

Lancashire and Cheshire: Generally distributed.

[Egg cabinet, drawer 24.]

WATER-RAIL (*Rallus aquaticus*)**CASE 115**

This shy and secretive resident is found in most marshy localities in the British Isles. Although quite common in many places, it is such an inveterate skulker that it is rarely seen. Its diet is varied—small fish, worms, horse leeches, as well as vegetable matter, are eaten. The somewhat bulky nest of reeds and sedges is usually placed among thick vegetation, in which six to eleven creamy-white eggs, lightly spotted with red-brown and pale grey, are laid. Incubation is by both sexes. The young when hatched are covered with black down.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 19.]

COOT (*Fulica atra*)**CASE 116**

This resident species frequents lakes, large ponds and sluggish rivers and reservoirs throughout the British Islands, but during severe weather many resort to tidal waters. Although not so frequently seen on land as the Moorhen, the Coot both runs and walks with ease. Aquatic plants, grass, worms, molluscs and aquatic insects form its principal diet. The nest, a compact structure of dry flags, is generally placed above shallow water, among reeds. The eggs, from seven to



CASE 115.

THE GREAT CRESTED GREBE.

ten in number, are buff colour, with small spots of blackish-brown. The nest in the group was collected from Knowsley Park. Incubation lasts 20-22 days. Two or three broods are reared.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 19.

TURTLE DOVE (*Streptopelia turtur*)

CASE 117

This is a summer migrant, visiting the British Isles from May to September. Its food consists chiefly of corn and seeds of many species of weed. Green weeds, especially those of chickweed and common fumitory, are also eaten. This bird is very partial to blackthorn and spruce plantations for nesting sites, where a slight flimsy structure of fine twigs is placed in a thick bush or on the branch of a tree. Two white eggs of a glossy texture are laid in May. Incubation lasts 13-14 days, both sexes taking part. Two broods are often reared.

Lancashire and Cheshire: Widely distributed:

[Egg cabinet, drawer 17.

RED-LEGGED PARTRIDGE (*Alectoris rufa*)

CASE 118

This handsome resident, often called the French Partridge, was first introduced into this country (Suffolk) about 1770, and has successfully established itself in various places, especially in the eastern counties. The nest is merely a slight hollow on the ground, lined with a few dead leaves and grasses, and often sheltered by a bush or rank herbage. The eggs, varying in number from ten to fifteen, are pale buff, speckled and blotched with rufous brown. This bird is decidedly beneficial to the farmer, as small snails, slugs and noxious weeds form a considerable portion of its diet. Incubation is accomplished by the female alone, and takes 23-24 days. Single brooded.

In Lancashire and Cheshire there are a few odd records due to the introduction of birds and eggs.

[Egg cabinet, drawer 18.

ROCK DOVE (*Columba livida*)

CASE 119

In the British Isles, this resident species is restricted to rocky coasts. Its food consists chiefly of grain, peas, beans and potatoes, seed of many plants, and mollusca. Favourite nesting sites are fissures in rocks and caves, a few bents and bits of heather serving as a nest. Two white eggs are laid at each sitting, and two or three broods are reared in a year. Incubation, both sexes taking part, lasts 19 days. From this species all the domestic varieties of fancy pigeons have been derived.

Lancashire and Cheshire: Doubtful.

[Egg cabinet, drawer 17.

STOCK DOVE (*Columba aenae*)**CASE 120**

This resident species has greatly increased in numbers of late years, extending its range northward, and is now plentiful in many parts of the north of Scotland. A varied diet of grain, clover leaves, turnip-leaves, beans, peas, seeds of various weeds and snails is eaten. Its favourite haunts are where old timber is plentiful, but it is also found near sand-dunes. The nesting site varies greatly in different localities, holes in trees, rabbit holes in sand-dunes, fissures of crags, under furze-bushes, and old buildings, etc., serving. Two white eggs are laid. Incubation, by both sexes, lasts 15½ to 16½ days. Two broods, and occasionally three, are reared.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 17.]

WOOD PIGEON (*Columba palumbus*)**CASE 120**

This is a common resident throughout the British Isles, its numbers being largely augmented by the arrival of immense flocks from the Continent during the winter. Its usual haunts are woods, plantations and coves, but most of its food is obtained in fields and open country. Barley, oats, beans, clover, turnip-leaves, beechmast and slugs all form part of a varied diet. The nest, merely a slight platform of twigs, is often found in fir and yew trees, but also in any kind of tree or bush, and frequently in thick ivy on cliffs and old walls. Two or three broods are reared annually, the first pair of white eggs being generally laid in February or March. Incubation lasts for 17 days, both sexes taking part.

Lancashire and Cheshire: Very common.

[Egg cabinet, drawer 17.]

CAPERCAILLIE (*Tetrao urgallus*)**CASE 121**

This resident species became extinct in the British Isles about 1760, and was re-introduced in 1837 from Sweden into Perthshire, where it is now fairly abundant in the pine and larch forests. Tender shoots of conifers, varied with insects, fruit and grain in summer, are its principal diet. The nest is a hollow scraped in the ground near the trunk of a tree or under a bush, and the eggs, from six to twelve in number, are pale reddish-yellow, spotted with brown. Incubation, by the female, lasts about 27 days. The male takes no part in the rearing of the young. Only one brood is produced in a season.

[Egg cabinet, drawer 17.]

GUILLEMOT (*Uria aalge*)**CASE 122**

This expert diver and fish-eater is a resident of our British shores. The winter is spent at sea, but in the spring large numbers of these birds make for the sea cliffs and rock stacks, where huge colonies, often accompanied by razor-bills, may be seen lining the rocky ledges, their dark backs towards the rocks and their glistening white breasts towards the sea. No nest is made, the pear-shaped egg being laid on the open rock ledge. Guillemot eggs vary in colour and markings to an extraordinary degree. Incubation, shared by both sexes, lasts 30-33 days. Single brooded.

Lancashire and Cheshire: A frequent visitor to inshore waters.

[Egg cabinet, drawer 25.]

RAZOR-BILL (*Alca torda*)**CASE 123**

This resident and well-distributed species is essentially maritime, only coming ashore to breed. An expert diver and swimmer, it catches with ease small fish such as smelts, sand-eels and sprats, which form its principal diet. In March large numbers collect, frequently with guillemots, on precipitous cliffs for breeding purposes. Only one egg is laid, and that is generally placed in a crevice or other sheltered position. The colour of the eggs varies from light chocolate to white, but they are occasionally greenish, and blotched, spotted or zoned with rich dark brown to black. Incubation, shared by both sexes, lasts 26-35 days. Single brooded.

Lancashire and Cheshire: Regular visitor.

[Egg cabinet, drawer 23.]

BLACK GUILLEMOT (*Uria grylle*)**CASE 124**

This expert diver and swimmer seldom wanders far from its breeding areas in winter, and is consequently but rarely seen in southern waters. Resident, it breeds on the north and west coasts of Scotland, and is abundant in the Hebrides, Orkneys and Shetlands. It is also found on the north-west coast of Ireland, and occasionally in the Isle of Man. It is an adept at catching small fish, which form its principal diet. No nest is made, the two white eggs, often with a bluish-green tinge, spotted and blotched with blackish-brown or ashy-grey, being deposited in a crevice of a sea cliff, or sometimes beside a boulder. Incubation, by both sexes, lasts 21 days. Single brooded.

Lancashire and Cheshire: Rare.

[Egg cabinet, drawer 25.]

CURLEW (*Numenius arquata*)
[See PLATE XII.]

CASE 125

This wary resident, may be seen almost at any time of the year walking sedately at the water's edge on our local sand-banks and mudflats, occasionally stopping to thrust its long curved bill into the ooze in search of food. It feeds on crustacea, molluscs, slugs, worms and berries. During the nesting season many curlews resort to the moorlands, where a grassy depression in the ground lined with bits of dry herbage forms its nest. Four eggs are usually laid, the colour varying from grey-green to brownish-buff and are spotted and blotched with brown. Incubation is shared by both sexes and lasts 30 days.

Lancashire and Cheshire: Common.

[*Egg cabinet, drawer 21.*]

BLACK GROUSE (*Lyrurus tetrix britannicus*)

CASE 125

This resident species is found chiefly in the north of England and Scotland, though to some extent occurring in the Midlands, southern and south-western counties of England. It prefers scrub and sparsely wooded places fringing moorlands rather than the moors themselves. The food consists of shoots of larch, Scotch pine, birch, insects and berries. In the spring, during morning and evening, the males engage in elaborate nuptial displays, dancing and posturing before assembled hens. The male, commonly known as the black-cock, is polygamous and takes no share in the duties of hatching the eggs or caring for the young. The female, or grey-hen, makes a slight nest in a hollow in the ground sheltered by grass or heather. The six to ten eggs are of a yellowish-white colour, spotted with orange-brown. The period of incubation lasts from 24-26 days. Single brooded.

Lancashire and Cheshire: Local.

[*Egg cabinet, drawer 17.*]

RED GROUSE (*Lagopus scoticus*)

CASE 125

This resident species is confined to Great Britain and is most abundant in the north of England and in Scotland. It is the insular representative of the Willow Grouse (*L. Lagopus*) of the northern portions of Europe, Asia and America, but unlike the latter species, it does not assume a white plumage in winter. Peaty upland moors and low-lying peat bogs and mosses are its favourite haunts. A hollow in the ground, sheltered by heather and lined with dead grasses, serves as a nest. The eggs, usually six to eleven in number, are yellowish-white in

PLATE XII.



CASE 125.

THE CURLEW.

ground colour, freely blotched all over with rich dark chocolate or red-brown. Incubation, by the female only, lasts from 20-24 days. It is single brooded.

Lancashire and Cheshire: Abundant on the moors.

[Egg cabinet, drawer 17.

COMMON PARTRIDGE (*Perdix perdix*)

CASE 126

This well-known resident is distributed generally throughout England and Wales, but is rather more local in Scotland and scarce in Ireland. It shows a preference for extensively cultivated land where large quantities of snails, slugs, injurious insects and noxious weeds are consumed. The nest, a slight hollow in the ground lined with dry grass and roots, is usually placed under the shelter of coarse vegetation, hedgerows or bushes. The eggs, normally ten to fifteen, and sometimes as many as twenty, are of a pale olive-brown. Incubation is by the female only, and lasts 24-25 days. It is single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 18.

PHEASANT (*Phasianus colchicus*)

CASE 126

This handsome long-tailed resident is distributed generally throughout the British Isles. For the most part it is a semi-domesticated bird of parks, woodlands and game preserves, which in most districts cannot maintain itself in the absence of preservation. It is an omnivorous feeder, and slugs, snails, grain and berries, large quantities of wire-worms and leather jackets are consumed. The two last-named are among the farmers' worst enemies. During March, the crowing of the cocks may be heard, when they fight for possession of the hens. The nest, a mere hollow in the ground, is sparsely lined with a few leaves and grasses, in which ten to fourteen olive-brown eggs are laid. Incubation is normally by the female only, and takes 23-25 days. Single brooded.

Lancashire and Cheshire: Common.

[Egg cabinet, drawer 18.

CORNCRAKE (*Crex crex*)

CASE 126

The favourite haunts of this migrant are rough pastures and low-lying meadows, where its compressed body enables it to travel quickly through growing grass. The presence of this skulking bird is often revealed by a loud rasping call uttered by the male. It is well distributed throughout the British Isles, arriving in April and usually leaving in October. Snails, seeds and worms, and insects, including earwigs, form its

principal diet. A carefully-built nest of coarse dead grass and leaves is placed in a slight hollow on the ground. The eggs, number from nine to twelve, and are usually pale buff, spotted and blotched with rusty red and lavender. The period of incubation, by the female alone, is 17 days.

Lancashire and Cheshire: Widely distributed.

[Egg cabinet, drawer 19.]

WOODCOCK (*Scolopax rusticola*)

The Woodcock is resident and widely distributed throughout the British Isles, but is more numerous during the winter, when its numbers are augmented by migrants from the north. Earth worms form its principal diet, but insects, mollusca and crustacea are also eaten. It feeds chiefly at night, leaving the shelter of the woods in the evening to feed in marshy places. A rounded depression, lined with dead leaves, often in a wood at the foot of a tree, serves as a nest. The eggs, normally four in number, are yellowish-white, spotted and blotched with various shades of warm brown and ashy shell marks. Incubation and blotched with rusty red and lavender. The period of incubation, by the female alone, is 17 days.

Lancashire and Cheshire: A regular visitor and a nesting species.

[Egg cabinet, drawer 21.]

In cases 127 to 131 there are examples of birds that do not breed in the neighbourhood, regular winter visitants, and birds that have only been recorded on rare occasions.

CASE 127

NUTCRACKER (*Nucifraga caryocatactes*)

The Nutcracker has been observed forty times south of the Tweed, three times only in Scotland and not at all in Ireland. It has been recorded locally but once—at Vale Royal, Delamere, Cheshire, 1860. This specimen is now in the Grosvenor Museum, Chester. (Coward, "Birds of Cheshire," page 98.)

[Egg cabinet, drawer 28.]

FIELDFARE (*Turdus pilaris*)

An autumn and winter visitor; may often be seen in large flocks in the Mersey Valley.

[Egg cabinet, drawer 28.]

REDWING (*Turdus musicus musicus*)

A common winter visitor.

[Egg cabinet, drawer 28.]

BLACK REDSTART (*Phoenicurus obscurus gibraltariensis*)

An unusual passing migrant to Great Britain. Records from Windermere and Southport.

[Egg cabinet, drawer 28.]

ROSE-COLOURED PASTOR (*Pastor roseus*)

The Rose-coloured Pastor is a vagrant in the British Islands. It occurs fairly frequently, and there are several recorded instances of its occurrence, viz., Ormskirk, 1821; Salford, 1829; Eccles, 1830, 1831 (locality not cited); Liverpool, 1840; Cartmel, 1854; Oldham, 1860, and from Prestwich Clough, Heaton Park and Barlow Wood, on the south of Manchester. (Mitchell, "Birds of Lancashire," page 77.)

[Egg cabinet, drawer 28.]

GOLDEN ORIOLE (*Oriolus oriolus*)

This species breeds in Cornwall. There are records of its nesting in six other English counties, but it is only recorded as a rare visitor to this locality.

[Egg cabinet, drawer 4.]

ALPINE SWIFT (*Micropus melba*)

A rare summer visitor. Only two occurrences are on record locally: Hulme, 1863; Preston, 1879.

WAXWING (*Ampelis garrulus*)

An irregular visitor to the British Islands. Invasions of the bird have occasionally occurred to the local area. The upper specimen of the two on exhibition was shot at Simonswood, near Liverpool.

[Egg cabinet, drawer 28.]

PIED FLYCATCHER (*Ficedula hypoleuca*)

A summer visitor; few breed in the local area. Recorded at Southport.

[Egg cabinet, drawer 4.]

GREAT GREY SHRIKE (*Lanius excubitor excubitor*)

An annual autumn and winter visitor to the eastern side of Great Britain, and only an occasional visitor to the local area. A female was shot at Urmston in January, 1904 ("Zoologist," 1904), and specimens were taken at Chorlton in 1905, Sale, Cheadle, in 1850, Delamere Forest in 1886, and Dorleston, November 9th, 1893. A specimen from Middlewich is in the Warrington Museum. (Coward, "Birds of Cheshire," page 66.)

[Egg cabinet, drawer 28.]

WHITE WAGTAIL (*Motacilla alba alba*)

The White Wagtail passes through the British Islands from the middle of March to the early part of June, being chiefly noticed in the coastal regions of the western side of Great Britain and Ireland. It has been recorded in the local area in 1869, at Burton. (Coward, "Birds of Cheshire," page 62.)

[Egg cabinet, drawer 3.]

SHORE LARK (*Otocoris alpestris flava*)

Rare visitor to the coast. Southport, Formby, Hilbre (1905).

BRAMBLING (*Fringilla montifringilla*)

A winter visitor to the British Islands, and an occasional visitor to the local area.

[Egg cabinet, drawer 4.]

HOOPOE (*Upupa epops*)

A passage-migrant to the British Islands. The specimen exhibited in the case is one of four shot at Knowsley Park in 1815. There are a dozen other records of its occurrence in the local area, viz., at Sale, Hoylake, and Manchester (Coward, "Birds of Cheshire," page 117), 1905, and Walney Island, 1884 (Mitchell, "Birds of Lancashire," page 97).

[Egg cabinet, drawer 7.]

YELLOW-BILLED CUCKOO (*Coccyzus americanus*)

Craig-y-don, Anglesea, November 10th, 1899.

MEALY REDPOLL (*Acanthis flammea*)

An irregular autumn and winter visitor.

[Egg cabinet, drawer 28.]

PINE GROSBEAK (*Pinicola enucleator*)

A rare vagrant. There have been fifty more or less authenticated records, of which two near Hurlston in 1837 were local. (Mitchell, "Birds of Lancashire," page 69.)

[Egg cabinet, drawer 28.]

ROUGH-LEGGED BUZZARD (*Buteo lagopus*)

Once a common visitant, but now rare. Five specimens were shot locally in 1880 (Upper specimen, Bickerstaff, Lancashire, December, 1827).

[Egg cabinet, drawer 30.]

KITE (*Milvus milvus*)

The Kite was formerly abundant in Great Britain, but it is now confined to Wales and is a very rare vagrant elsewhere. At one time it nested in the tall trees among the fells, but it has not appeared during the last 25 years. Although formerly a common resident in the Cheshire woodlands, it has been noticed very occasionally within recent years.

[Egg cabinet, drawer 8.]

HONEY BUZZARD (*Pernis apivorus*)

The Honey Buzzard is an uncommon passage-migrant in May, September and October. It is more frequently seen in the eastern counties. The two specimens in the case are local, the immature female being shot at Knowsley Park by the Hon. E. G. Stanley, in October, 1818, and the adult female at Rainford, in 1835. It is now a very rare visitor to the local area.

MONTAGUE'S HARRIER (*Circus pygaragus*)

A rare summer visitor in the British Islands. It has been recorded twice locally—Walney Island, in 1874 (Mitchell, "Birds of Lancashire," page 107), and Whitendale Moor, 1889 (Mitchell, "Birds of Lancashire," page 123).

[Egg cabinet, drawer 8.]

GREENLAND FALCON (*Falco rusticolus candicans*)

An irregular visitor.

MARSH HARRIER (*Circus aeruginosus*)

A casual visitor. Nested on Martin Mere many years ago. Visited Rostherne, Cheshire, 1913; Altcar, Lancashire, 1827.

[Egg cabinet, drawer 8.]

HEN-HARRIER (*Circus cyaneus*)

The Hen Harrier is a British resident and a winter visitor, and nests from time to time among the fells. Female Hen-Harrier shot at Knowsley, August, 1902, and the fine male in full adult plumage was shot at Simonswood Moss, Kirkby, November, 1913.

[Egg cabinet, drawer 8.]

HOBBY (*Falco subbuteo*)

A summer visitor in the British Islands, but rare locally. Latest records, Lancashire, Marshside, 1904 (Holder); Cheshire, Warburton, 1904-5; Nested Vale Royal, 1895; Oakmere, 1898.

[Egg cabinet, drawer 8.]

GOSHAWK (*Astur gentilis*)

A rare vagrant. There are only two local records: Lancashire, Colne, 1863; Whalley, Bowland, 1838.

[Egg cabinet, drawer B.]

SCOPS OWL (*Otus scops*)

A casual straggler to the British Islands. The two local area records are Boggart Clough, about 1850 (this specimen is now in the Peel Park Museum) (Mitchell, "Birds of Lancashire," page 105), and Cardon Park, in 1868 (Coward, "Birds of Cheshire," page 126).

[Egg cabinet, drawer 29.]

TENGMALM'S OWL (*Cryptoglaux funerea*)

Tengmalm's Owl has its home in the far north, and has occasionally straggled to the British Islands in very cold winters. A specimen is recorded as having been taken near Preston, which is now in the Nottingham Museum. (Mitchell, "Birds of Lancashire," page 104.)

[Egg cabinet, drawer 29.]

LITTLE OWL (*Carine noctua mira*)

The Little Owl is now resident as an introduced bird, and is increasing in numbers annually. There are about twenty early recorded examples which may have been genuine vagrants (Dr. Hartert). Locally there is one record by Mr. T. Williams, of Ormskirk, in 1863, at Bathwood, Ormskirk.

[Egg cabinet, drawer 7.]

SNOWY OWL (*Nyctea scandiaca*)

A rare winter visitor. There are no local records.

[Egg cabinet, drawer 7.]

SHORT-EARED OWL (*Asio flammeus*)

Resident and a winter visitor. It is now only a winter visitor to the local area.

[Egg cabinet, drawer 7.]

CASE 128.**GOLDEN-EYE** (*Glaucionetta clangula*)

A winter visitor to the British Islands and regularly seen in this district.

[Egg cabinet, drawer 36.]

LONG-TAILED DUCK (*Clangula hyemalis*)

A winter visitor. There are a few local records only (Mitchell, "Birds of Lancashire," page 199, and Coward, "Birds of Cheshire," page 171).

[Egg cabinet, drawer 15.]

GADWALL (*Anas strepera*)

A winter visitor. Rarely seen in this district.

[Egg cabinet, drawer 11.]

POCHARD (*Nyroca erina*)

A regular winter visitor, and often seen in large numbers locally.

[Egg cabinet, drawer 15.]

PINTAIL (*Dafila acuta*)

A resident and winter visitor. Regularly seen in this district during the winter months.

[Egg cabinet, drawer 13.]

GARGANEY (*Querquedula querquedula*)

A summer resident and vagrant. Locally a very rare visitor. Last record, Burton Marsh, Cheshire, 1929 (Museum Collection).

[Egg cabinet, drawer 13.]

TUFTED DUCK (*Nyroca fulgula*)

A resident and winter visitor. Locally not uncommon, frequently seen on the meres and marshes.

[Egg cabinet, drawer 15.]

SCAUP DUCK (*Nyroca marila*)

A winter visitor. Regularly seen in this district.

[Egg cabinet, drawer 15.]

HARLEQUIN DUCK (*Histrionicus histrionicus*)

A very rare vagrant. Lancashire, Crossens, 1916 or 1917 (Coward).

[Egg cabinet, drawer 33.]

GOOSANDER (*Mergus merganser*)

A regular winter visitor.

[Egg cabinet, drawer 14.]

HOODED MEGANSER (*Mergus cucullatus*)

A very rare visitor from America. No local records.

SMEW (*Mergellus albellus*)

A frequent visitor locally to coasts and inland waters.

EGYPTIAN GOOSE (*Chenalopex oegyptiacus*)

Many examples of this introduced species, an inhabitant of Africa and Palestine, have been killed in various parts of the country.

BERNACLE GOOSE (*Branta leucopsis*)

A winter visitor. Regularly visits this district, and is occasionally seen inland. Prior to 1862 it was common on the Dee Marshes. Captain Congreve has one in his collection at Burton, Cheshire. (Coward, "Birds of Cheshire," page 157.)

[Egg cabinet, drawer 36.]

BRENT GOOSE (*Branta bernicla*)

A winter visitor. Locally not uncommon. Visits the Dee Estuary in winter in considerable numbers. It is recorded that 200 were seen in 1888 by Mr. A. O. Walter. Specimen at Burton, 1884. Mr. L. Jones shot one on Hilbre Island, 1895. (Coward, "Birds of Cheshire," page 157.)

WHITE-FRONTED GOOSE (*Anser albifrons*)

A winter visitor. Of fairly common occurrence locally in the winter months.

[Egg cabinet, drawer 36.]

BEAN GOOSE (*Anser fabalis*)

A winter visitor. Occasionally shot on the coasts of this district. Rostherne, Cheshire, 1916 (Coward).

[Egg cabinet, drawer 36.]

PINK-FOOTED GOOSE (*Anser brachyrhynchus*)

A winter visitor. Regularly seen in this neighbourhood.

[Egg cabinet, drawer 36.]

MUTE SWAN (*Cygnus olor*)

A resident and generally distributed species in a semi-domesticated condition. Originally introduced. Locally common.

[Egg cabinet, drawer A.]

WHOOPER SWAN (*Cygnus cygnus*)

Occasional winter visitor.

BEWICK'S SWAN (*Cygnus bewickii*)

A winter visitor. Fairly common in England and Wales.

SHOVELLER DUCK (*Spatula clypeata*)

A resident and winter visitor, but in small numbers.

[Egg cabinet, drawer 11.]

WIDGEON (*Mareca penelope*)

A resident and winter visitor. Locally seen as a visitor only.

[Egg cabinet, drawer 13.]

COMMON SCOTER (*Melanitta nigra*)

A resident and winter visitor. Locally of common occurrence during the winter months.

[Egg cabinet, drawer 16.]

VELVET SCOTER (*Melanitta fusca*)

Not infrequent off our local shores.

CASE 129.

CURLEW SANDPIPER (*Erolia testacea*)

A passage-migrant, chiefly on the east coast. Fairly common locally in the spring and autumn.

GREAT SNIPE (*Capella media*)

A straggler to the British Islands in August to October. It was first described by Pennant from a specimen shot in Lancashire (Mitchell, "Birds of Lancashire," page 184), and has occurred on several occasions in Lancashire and Cheshire. The specimen exhibited was shot at Winwick, Lancashire.

JACK SNIPE (*Lymnocryptes minimus*)

The Jack Snipe is a winter visitor and fairly abundant locally.

[Egg cabinet, drawer 32.]

TURNSTONE (*Arenaria interpres*)

A passage-migrant and winter visitor. Fairly common locally.

[Egg cabinet, drawer 31.]

GREY PHALAROPE (*Phalaropus fulicarius*)

A rare and irregular passage-migrant. It is an irregular visitor to the local area.

[Egg cabinet, drawer 32.]

RED-NECKED PHALAROPE (*Phalaropus lobatus*)

A summer migrant and locally rare. Recorded once from Southport and eight times at Carnforth and Martin marshes. ("History of Lancashire," page 202.)

[Egg cabinet, drawer 32.]

SPOTTED SANDPIPER (*Tringa macularia*)

An American bird whose appearances in the British Islands seem to be few out of many doubtful records.

[Egg cabinet, drawer 32.]

DOTTEREL (*Eudromias morinellus*)

A spring and autumn visitor.

[Egg cabinet, drawer 20.]

GREEN SANDPIPER (*Tringa ochropus*)

Locally a regular visitor.

[Egg cabinet, drawer 32.]

KNOT (*Calidris canutus*)

An abundant passage visitor.

PURPLE SANDPIPER (*Erolia maritima*)

A regular winter visitor and widely distributed over all our coasts.

[Egg cabinet, drawer 21.]

SANDERLING (*Crocethia alba*)

The Sanderling is a passage-migrant in April, May and in August to October. It is also a winter visitor, preferring sandy coasts.

PTARMIGAN (*Lagopus mutus millaesi*)

Resident in the north of Scotland. No local records. Specimens in winter and spring change of plumage are exhibited (Case B).

[Egg cabinet, drawer 34.]

STONE CURLEW or THICK-KNEE (*Oedicnemus oedicnemus*)

A rare resident in the British Islands. One in the Warrington Museum, taken at Hoole, Cheshire (Coward, "Birds of Cheshire," page 200). A specimen taken at Knowsley, Lancashire, 15th August, 1931, is in the Study Collection.

SLAVONIAN GREBE (*Podiceps auritus*)

A winter visitor. A few breed in the north mainland of Scotland, but there is no proof that it breeds elsewhere in the British Islands. There are only a few records of its appearance in the local area. One was recorded at Burton in 1839 (Coward, "Birds of Cheshire," page 250).

[Egg cabinet, drawer 33.]

RED-NECKED GREBE (*Podiceps griseigena*)

A winter visitor, chiefly to the east coast of the British Islands. One is recorded as shot by Mr. Lewis Jones, at Hilbre Island, in the estuary of the River Dee, Cheshire (Coward, "Birds of Cheshire," page 249).

EARED or BLACK-NECKED GREBE (*Podiceps nigricollis*)

A resident and visitor to the British Islands. In the local area one was secured near the mouth of the River Lune, Lancashire, in March or April, 1886 (Mitchell, "Birds of Lancashire," page 262); one was shot at Bagillt, Dee estuary, on the 27th September, 1856 (Coward, "Birds of Cheshire," page 250); and an adult male in full summer plumage was captured alive at Middleton, near Lancaster, on the 28th July, 1904 ("Zoologist," 1904, page 350). A specimen caught in a fishing net on the Mersey, near Tranmere, in 1898, is now in the Chester Museum.

[Egg cabinet, drawer 24.]

PALLAS'S SAND GROUSE (*Sprrhaptes paradoxus*)

An irregular visitor to the British Islands; the greatest numbers occurred in May, 1863, and in 1888. Of the specimens in the case, the male with the wings closed is from Tremadoc, North Wales, July 8th, 1859—it is one of the first examples known to be taken in Europe. The male with open wings was taken at Hoylake, in 1863, and the female at Storeton, July 1st, 1888. Wylenshawe, Cheshire, 1908.

QUAIL (*Coturnix coturnix*)

This species is resident in the British Islands, with additional visitors in spring. Although once a common visitor to this district, it is now rare, and only seen at irregular intervals.

[Egg cabinet, drawer 18.]

SPOTTED CRAKE (*Porzana porzana*)

A spring visitor to the British Islands. There were three occurrences recorded in 1898, and one in 1904, all in the Rusland Valley, Furness, Lancashire ("Zoologist," 1904, page 460).

[Egg cabinet, drawer 19.]

LITTLE AUK (*Alle alle alle*)

An irregular winter visitor, occasionally met with in the local area.

[Egg cabinet, drawer 33.]

GREAT AUK (*Alca impennis*)

The Great Auk (now extinct) used to breed in St. Kilda, but even by the middle of the eighteenth century the birds had become very irregular in their visits. The bird made no nest, but the single egg was laid on the bare rock. The Museum possesses a good example of the Great Auk's egg. The exhibited specimens include the skull of the Great Auk, photographs of the bird and an egg which is now in the possession of the Norwich Corporation.

[Egg cabinet, drawer A.]

LITTLE STINT (*Erolia minuta*)

The Little Stint visits the British Islands in the spring and in the autumn on its migration to and from the North. It is occasionally met with in the estuaries of the Dee and Mersey in the autumn.

TEMMINCK'S STINT (*Erolia temminckii*)

Temminck's Stint is a rare and irregular migrant, chiefly in autumn, and is very rarely met with in the spring. In the local area it is recorded from Ribbleton Moor, 1864, Pilling, 1873 (Mitchell, "Birds of Lancashire," page 191), and the Dee Marshes near Shotwick, 1862 (August), (Coward, "Birds of Cheshire," page 215).

[Egg cabinet, drawer 32.]

GREY PLOVER (*Squatarola squatarola*)

A regular visitor to the local area.

RUFF (*Philomachus pugnax*).

Shot near Liverpool about 1820.

AVOCET (*Recurvirostra avocetta*)

The Avocet was formerly one of our regular summer migrants, but it is now merely a straggler. It has occurred in the local area on Walney Island and on the Ribble.

[Egg cabinet, drawer 21.]

WOOD SANDPIPER (*Tringa glareola*)

A passage-migrant and a rare autumn and winter straggler to the local area.

[Egg cabinet, drawer 21.]

COLLARED PRATINCOLE (*Glareola pratincola*)

The Collared Pratincole is an African species, and occasionally visits the British Islands in the spring and autumn. The bird in the case is the first recorded British specimen, and was taken at North Meols, Lancashire, in 1803; also recorded at Ormskirk, 1807.

WHIMBREL (*Numenius phaeopus*)

A regular passage-migrant. Visits Morecambe Bay.

[Egg cabinet, drawer 21.]

BAR-TAILED GODWIT (*Limosa lapponica*)

A common winter visitor and passage-migrant.

BLACK-TAILED GODWIT (*Limosa limosa*)

An irregular migrant, and more rarely met with than the Bar-tailed Godwit.

[Egg cabinet, drawer 21.]

DUNLIN (*Erolia alpina*)

A common resident and winter visitor. The specimens here shown are in winter plumage.

[Egg cabinet, drawer 21.]

SPOTTED REDSHANK (*Tringa erythropus*)

An uncommon passage-migrant, rare to the local area. A specimen taken at Southport is in the Study Collection.

[Egg cabinet, drawer 32.]

GREENSHANK (*Tringa nebularia*)

The Greenshank is a resident in the British Islands, and breeds in Scotland. It is a passage-migrant.

GLOSSY IBIS (*Plegadis falcinellus*)

Common in Southern Europe, but only an accidental visitor to Great Britain in autumn or early winter; observed on four occasions in Lancashire during the past century. The specimen shown was shot at Ormskirk over 62 years ago. No records in Cheshire.

CASE 130.**SANDWICH TERN** (*Sterna sandvicensis*)

A summer visitant. At one time it bred freely on Walney Island (Mitchell, "Birds of Lancashire," page 208).

[Egg cabinet, drawer 22.]

BLACK TERN (*Chlidonias niger*)

A passing migrant. Few local records—one at Ashton-on-Mersey, November 3rd, 1893 ("History of Lancashire," page 203).

IVORY GULL (*Pagophila eburnea*)

This species appears on the Northern coasts when severe winters have driven it from Spitsbergen and the neighbourhood. Locally it is said to have been killed on several occasions in Morecambe Bay (?), and one was taken at Kendal and one at Carnforth ("Fauna of Lakeland," page 438). One seen, January 4th, 1926, in the Mersey by W. H. Riddell.

GLAUCOUS GULL (*Larus hyperboreus*)

This species is the "Burgomaster" of the whalers. It is distinguished by its enormous wingspread, being one of the largest of the gulls. It is only an irregular visitor, and very rare to this locality. Formby, 1873; Freshfield, 1922 (Holder); Formby, 1924.

SABINE'S GULL (*Xema sabini*)

Bridlington, September, 1901, E. R. Paton. A very occasional visitor.

POMATORHINE SKUA (*Stercorarius pomarinus*)

A passage-migrant and winter visitor. It fairly regularly makes its appearance in the district.

POMATORHINE SKUA and COMMON GULL.

These specimens were shot in the Mersey in circumstances shown in the case. While in flight, the Skua is forcing the Gull to release its freshly-caught prey, which the Skua in turn by a sudden dive catches before it reaches the sea.

GREAT SKUA (*Catharacta skua*)

This species is resident in the Shetlands. It is locally known as the "Sea Hawk." Longton Marsh (Charnley, "L.N." II, 232, 1902); Birkdale, September 1916 (Holder); Bidston (Byerley), New Ferry, (Brockholes), Ainsdale, 1918-1920 (Holder); Hoylake, September, 1917 (Marples); Warrington, August, 1922 (Dunlop).

ARCTIC SKUA (*Stercorarius parasiticus*)

A summer resident and passing migrant. Not uncommon locally.

[Egg cabinet, drawer 23.]

BUFFON'S SKUA (*Stercorarius longicaudus*)

Irregular autumn migrant; locally a rare visitor. Ribble Estuary (Holder), Latchford, 1894; Dee Marsh, 1918.

[Egg cabinet, drawer 33.]

LITTLE GULL (*Larus minutus*)

Irregular autumn and winter visitor. It has been seen on rare occasions in this district during the winter.

BITTERN (*Botaurus stellaris*)

A winter visitor chiefly, but in some districts is seen also in summer.

GREAT NORTHERN DIVER (*Colymbus immer*)

A winter visitor. Most plentiful in the North. Locally only occasionally recorded.

[Egg cabinet, drawer 24.]

STORMY PETREL (*Thalassidroma pelagica*)

A resident. Locally sometimes seen after storms.

[Egg cabinet, drawer 27.]

MANX SHEARWATER (*Puffinus puffinus*)

A resident and a winter visitor to this district.

[Egg cabinet, drawer 27.]

FULMAR PETREL (*Fulmarus glacialis*)

A resident. Locally of very rare occurrence. Northwich, 1929 (Boyd).

LEACH'S PETREL (*Oceanodroma leucorrhoea*)

A straggler, breeding at St. Kilda. Locally it has only been recorded during stormy weather.

[Egg cabinet, drawer 27.]

WILSON'S PETREL (*Oceanites oceanicus*)

Very rare vagrant. The only local record is of one washed ashore, Walney Island, November, 1890 ("Fauna of Lakeland," page 457).

The following additional birds have been occasionally recorded in Lancashire and Cheshire, and representative specimens are contained in the Study Collection, and may be seen on application:—

- Blue-headed Wagtail (*Motacilla flava flava*).
- Black-throated Wheatear (*Oenanthe hispanica*).
- Fire-crested Wren (*Regulus ignicapillus*).
- Richard's Pipit (*Anthus richardi*).
- Woodchat (*Lanius senator*).
- White-bellied Swift (Alpine) (*Micropus melba*).
- Roller (*Coracias garrulus*).
- Spotted Eagle (*Aquila clanga*).
- Red-footed Falcon (*Falco vespertinus*).
- Purple Heron (*Ardea purpurea*).
- Little Bittern (*Ixobrychus minutus*).
- Night Heron (*Nycticorax nycticorax*).
- American Bittern (*Botaurus lentiginosus*).
- Spoonbill (*Platalea leucorodia*).
- White-eyed Duck (*Nyroca nyroca*).
- Surf Scoter (*Melanitta perspicillata*).
- Baillon's Crake (*Porzana pusilla intermedia*).
- Little Crake (*Porzana parva*).
- Crane (*Megalornis grus*).
- Little Bustard (*Otis tarda*).
- Sociable Plover (*Chettusia gregaria*).
- Buff-breasted Sandpiper (*Tryngites subruficollis*).
- Red-breasted Snipe (*Limnodromus griseus*).
- Roseate Tern (*Sterna dougallii*).
- Gull-billed Tern (*Geochelidon nilotica*).
- Frigate Petrel (*Pelagodroma marina*).
- Iceland Gull (*Larus glaucopterus*).

CASE 131.

BIRDS BENEFICIAL TO AGRICULTURE.

About 120 species among the birds recognised as British are more or less favourable to agriculture, and the 43 species on exhibition in this case may be described as decidedly so. Insects form the principal food of the majority of these birds, and many are entirely insectivorous. The following illustrations demonstrate the good work performed by birds. As many as 1,200 wireworms, the larvae of the click beetle—one of the most destructive of insect-larvae—have been found in the crop of a single pheasant; and 440 leather-jackets, the larvae of the daddy-longlegs or cranefly, from another.

According to "Yarrell, "British Birds," 4th edition—the examination of 210 pellets of the Tawny Owl, revealed the remains of 6 rats, 42 mice, 296 voles, 33 shrews, 48 moles,

18 small birds, a countless number of cockchafers, and 48 other beetles, a sufficient proof of the good rendered by the owls. Many other illustrations could be added.

The following are the species specially beneficial to agriculture on exhibition in this case:—

	See also Case	See also Case	
Pheasant ... ...	...A, 126	Wren ... ...	... 43
Common Partridge ...	... 126	Song Thrush ...	... 58
Red-legged Partridge ...	... 118	Redwing ...	... 127
Corn Crake ...	... 126	Hedge Sparrow ...	... 66
Black Headed Gull ...	... 110	Robin ...	... 54
Golden Plover ...	... 98	Wheatear ...	... 56
Lapwing ...	... A, 98	Garden Warbler ...	... 26
Kestrel ...	... 83	Willow Warbler ...	... 52
Long-eared Owl ...	... 82	Great Tit ...	... 48
Short-eared Owl ...	... 127	Coal Tit ...	... 49
Tawny Owl ...	... 80	Blue Tit ...	... 47
Little Owl ...	... 127	Golden Crested Wren ...	... 44
Barn Owl ...	... 81	Pied Wagtail ...	... 74
Nightjar ...	... 57	Yellow Wagtail ...	... 32
Swift ...	... 77	Meadow Pipit ...	... 37
Cuckoo ...	... 70 71 72	Skylark ...	... A, 35
Green Woodpecker ...	... 73	Starling ...	... A, 2
Great Spotted Woodpecker ...	... 64	Rook ...	... A, 1
Swallow ...	... A, 75	Jackdaw ...	... A, 8
House Martin ...	... 76	Magpie ...	... A, 4
Sand Martin ...	... 78	Jay ...	... 3
Spotted Flycatcher ...	... 46		

Other specimens in this case are designed to show the remarkable changes in the plumage of many birds according to age and season. Many gulls, for example, differ so much from year to year in the first four or five years of life that birds of the same species are often mistaken for different ones. Some species of birds have a summer or breeding plumage, which is quite different to the winter plumage, and males are often very different from females.

RED-THROATED DIVER (*Colymbus stellatus*)

Four specimens to illustrate the stages in the change of plumage of this species from the chick to the adult. The complete breeding plumage of this species may be seen in the group.

BLACK GUILLEMOT (*Uria grylle*)

Ten specimens showing the stages in the change of plumage from the chick to the adult summer plumage, and from this to the winter plumage. The winter plumage of the adult Black Guillemot resembles that of the young bird, except that the latter possesses a white or mottled patch on the wings not seen on the older birds.

HERRING GULL (*Larus argentatus*)

The front six specimens of this species illustrate the yearly change of plumage from the chick to the adult in five years. The two specimens at the back are intermediate stages of the third year.

KITTIWAKE GULL (*Rissa tridactyla*)

Contrast of immature and adult plumage.

GREAT BLACK-BACKED GULL (*Larus marinus*)

A specimen in immature plumage. The adult may be seen in the group of the Great Black-backed Gull.

EIDER DUCK (*Somateria mollissima*)—(MALE)

Six specimens showing the gradual changes in the moult from the dark brown to the full adult male plumage.

CABINET OF EGGS OF BRITISH BIRDS.

In this Cabinet are specimens of the eggs of British Birds, arranged in their respective clutches, including all the nesting species and most of the birds that visit the British Islands. The birds that breed and build nests in the neighbourhood are distinguished by a red asterisk.

A key list of the birds is placed over the case, arranged alphabetically with cross references, giving the number of the drawer opposite each bird, in which its eggs may be found.

A CASE ARRANGED TO FACILITATE THE COMPARATIVE STUDY OF BIRDS' EGGS.

(a) Structure of egg shell and the surface grain or texture of eggs.

The egg is composed of carbonate of lime which is secreted by the shell gland and spread over and around the egg shortly before the egg is laid. (Hence the necessity for lime salts in the food of birds generally.)

In certain families the egg shell exhibits a definite grain or texture and in some cases species of the same genus are so distinguished. Examples of this latter condition, which may be called a specific difference, are seen in the difference between the Trumpeter Swan* (1) and Mute Swan (2), or between the Grey Lag Goose (3) and Pink-footed Goose (4), examples of which are shown.

*The numbers here given are the numbers attached to the Specimens in the Case.

According to appearance, eggs may be grouped under the following heads:—Smooth, Glossy, Porcellanous, Greasy, Chalky film, Dull and Granulated.

Smooth Variety. The majority of birds lay eggs with a smooth surface. Examples shown are Pheasant (5), Red-Legged Partridge (6), Moorhen (7), Golden Plover (8), Oyster Catcher (9), Song Thrush (10), Jay (11), Skylark (12), Butcher Bird (13), and Wheatear (14).

Glossy Variety. Examples of this variety, which in addition are usually colourless, thin and semi-transparent, are seen among others in Woodpeckers, one of which, the Green Woodpecker (15) is shown.

Porcellanous Variety. The Tinamous, Central and South American Birds are good examples, the shells of which are thick, opaque and so highly glazed as to have a burnished appearance. Specimens of the birds may be seen in the Upper Gallery, and its eggs are shown in this Case (16).

Greasy Variety. All ducks have eggs with a greasy or oily appearance, i.e., Mallard (17), Eider Duck (18), and Merganser (19).

Chalky-film Variety. Some eggs are covered with a chalky-film, for example the Flamingo (20), Cormorant (21), and Grebe (22). It is suggested that this covering serves as a protection against too much damp—Grebes, for example, build over water.

Dull Variety. Many eggs are without polish or lustre, i.e., the Black Guillemot (23) and Kestrel (24).

Granulated Variety. Examples of this variety are best exhibited by eggs of many of the Running Birds—Emu (25) and Cassowary (25a)—but there are others such as the Guinea Fowl (26) and Francolin (27), which present quite a granulated appearance.

(b) Colouring of Eggs.

The pigment of birds' eggs is on the surface and is deposited immediately before it is laid. Almost every shade of colour is represented, and a sufficient explanation of its meaning is not always forthcoming. In many instances the colour markings are undoubtedly protective. Generally speaking, eggs that are laid in the open, with little or no covering or the protection of a nest, have their colour markings harmonising with the colour tones of their surroundings, rendering them so inconspicuous that they are not seen by a casual observation, i.e., the Terns (see Case 202), the Lapwing

and Snipe (see Case 201), the Ptarmigan and Grouse. Again it is suggested that the reason of the light colour or whiteness of the eggs of many birds that build in dark places, i.e., the Starling (see Case 109), the Sand Martin (see Case 154), the Kingfisher (see Case 157), and the Stock Dove (see Case 224) is that the eggs may be easily found by the parents, but there are many exceptions to this.

The eggs of young birds are usually not so richly coloured as when the birds are in their prime, and when old age advances the colours again become less brilliant. Examples are here shown taken from various clutches, viz., House Sparrow (28); Robin (29), Sparrow Hawk (30), Buzzard (31), and Lapwing (32), in which the variations seen are probably due to the difference in age of the parent of each egg. Eggs of the same clutch, however, often vary, i.e., clutch of Lesser Tern (33). Two complete clutches of Lapwing eggs are also shown, one (32a) being all normal in colour, whereas the other (32b) are abnormal in colour. But perhaps the most striking example of the variations exhibited by eggs, not only of the same species, but even of the same bird, is that of the Guillemot, in which no two eggs are quite alike. An interesting series of these eggs may be seen in the Egg Cabinet (Case 231, drawers 25 and 26).

(c) Clutches.

The set of eggs which a bird lays for each setting is called a clutch. The number of such a full clutch varies in different species, from one to as many as twenty. In many groups of birds the number of the clutch is constant and distinctive of the species. The following examples are given:—

One. Where a clutch consists of only one egg, it is generally large in comparison with the bird, i.e., Guillemot (34); Puffin (35), and Stormy Petrel (36).

Two. These clutches are very common and constant. Examples shown—Dove (37), Nightjar (38), Diver (39), and Buzzard (40).

Two to Three. Many birds are variable, sometimes two, sometimes three to the clutch, i.e., Herring Gull (41), Kittiwake (42), Skua (43) and Common Tern (44).

Four. This is the constant number among Plovers, etc., i.e., Ring Plover (45), Sandpiper (46), and Common Snipe (47).

Four to Seven. The Perching Birds are mostly included in this series, i.e., Song Thrush (48), Greenfinch (49), Yellow Bunting (50) and Swallow (51). A few, however, as the Tits, lay as many as ten or twelve eggs.

Ten to Fifteen. Nearly all the Game Birds, Rails and Ducks, lay from ten to fifteen eggs to the clutch, sometimes more. Examples given are the Common Partridge (52) and Moorhen (53).

The Cuckoo lays several eggs during the season, but only one is deposited in each nest of the foster mother.

For a further account of the Cuckoo, see description of groups under Cases 70, 71, and 72.

(d) Size of Egg.

Eggs vary much in size, for example note the egg of Ostrich (54) and Humming Bird (55). A large egg usually means that the young chick is hatched in a less helpless condition than from the small egg, as a much larger amount of food yolk is present, the incubation period is longer and the chick is more developed when hatched. Generally, but not at all constantly, the size of the egg is proportional to the parent, as the number of eggs to be covered by the bird must be considered. The following examples illustrate the size of eggs in comparison to that of the parent:—

The egg of the partridge (56) although a much larger bird is no larger than the egg of the Snipe (57). Again the Blackbird's egg (58) is much smaller than the Snipe, although the birds are about equal in weight. The young Blackbirds are helpless when hatched, but the young Snipe are able to run about immediately. The Cuckoo and Missel Thrush are of equal size, but the egg of the former Cuckoo (59) is much smaller than the latter (Missel Thrush 60), and is but slightly larger than the Sparrow's egg (61). Again the Guillemot egg (62) is considerably larger than the Raven (63) although the birds are about equal in size, whereas the Imperial Eagle is five or six times larger than the Guillemot, but its egg (64) is no larger.

(e) Form of Eggs.

The shape of the egg is fairly constant in the various groups of birds. The principal varieties may be classed under the following heads:—Ovoid, Pyriform, Bi-conical, Oval, and Spherical.

Ovoid. This is the most common and familiar form—that of the Common Fowl. Nearly all Game Birds, Gulls,

Ducks and Perching Birds have this type of egg. Examples shown are Partridge (65), Great Black-backed Gull (66), Jackdaw (67) and Nightingale (68).

Pyriform. The pear-shaped eggs are characteristic of Snipe, Plovers, etc., the Guillemot and Great Auk. The pyriform shape of egg is especially useful where little or no nest is made, and its shape causes it to roll in small circles if disturbed. The examples of this variety shown are—Godwit (69), Ring Plover (70), Lapwing (71), and Guillemot (72).

Bi-conical. Eggs pointed at both ends are characteristic of the Grebes, i.e., Great Crested Grebe (73) and Little Grebe (74).

Oval. The eggs of the Nightjar (75) have both ends equally rounded, forming a pure oval.

Spherical. Nearly round or spherical eggs are characteristic of the Owls and a few other groups. The eggs of birds of prey approach this form. Examples shown are Tawny Owl (76), Barn Owl (77), Kingfisher (78), Osprey (79), Merlin (80) and Sparrow Hawk (81).

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